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OUTLOOK '85

PROCEEDINGS



Agricultural Outlook Conference

United States Department of Agriculture

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Washington, D.C.

January 1985

These pages contain the proceedings of the U.S. Department of Agriculture's 61st annual agricultural Outlook Conference. Included are all papers submitted by those participating in the program. Also, transcriptions of several speakers' remarks are provided. While transcriptions of the spoken word may not read as smoothly as a prepared written text, the substance of speakers' comments is intact, and, we believe, is better than having no record at all.

Outlook '85 took place in Washington, D.C. on December 3-5, 1984, drawing more than 1,275 people to its 43 sessions, a slight decrease from previous years. Outlook '86 is set for December 2-4, 1985. All who receive a copy of this publication will be sent preliminary information about Outlook '86.

Thank you for your interest in USDA and in the Outlook Conference.

James R. Donald

JAMES R. DONALD
Chair, Conference
Steering Committee

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CONFERENCE WELCOME

OUTLOOK '85

John R. Block
Secretary of Agriculture

Annual Agricultural Outlook Conference
Washington, DC, Session #1

For Release: Monday, December 3, 1984

I bid you a very hearty good morning. It is great to see such a big crowd here today. It is a pleasure for me to welcome all of you to USDA's 61st annual agricultural Outlook Conference.

You are going to be having an opportunity to hear a very distinguished group of people here this week. As we completed our staff meeting this morning, I was emphasizing to the rest of the staff the importance of this conference. I think a lot of us are convinced that we are at a crossroads in agriculture--right now. We're going to have to choose the road to take--the best road for the American farm sector's future.

The discussion here and the stimulation of this conference is going to help determine and decide which road we do take as we look to the future of agriculture.

Whether you're a newcomer to these conferences or a seasoned veteran, I'm certain that you'll find that this is one of the most important and informative events that the Department sponsors throughtout the year.

USDA planned its first Outlook Conference back in 1923. Now that was a bit before my time, but they tell me that the main purpose of that first conference was to get economic and research findings out to the American farmer. There was a great amount of information on seed varieties and crop development as well. Another subject of importance to them--just as it is today--was projected supply and demand.

Just by looking at the program, it's very obvious to all of us here that the Outlook Conference has been expanded over the years since those early days. One thing each year that has increased dramatically is the use of electronic technology. We function in a fast-paced world. Our goal at the Department has been to gather and distribute important information as quickly as possible. Electronic technology has become an important part of our operation.

At this very minute, 900-line telephone service is making my words to you available to groups all across the country. And these 900 lines allow the people outside the Department to call in to hear speeches as they're delivered. This year the service has been expanded to cover many more sessions at USDA. This means that the conference is available moment-by-moment to anyone with a telephone.

In addition, the commodity follow-up sessions will be on a two-way hookup also, so people from as far as Waco, Texas, and as remote as Gillson, Illinois, will be able to phone in questions for participants in that discussion.

To me this really brings the conference to the people; saving time and money for the people won't be able to come here. But we're certainly glad you came here and we hope that the people continue to come to Washington.

We have some other highlights this year that I'd like to cover. There's a new section on futures trading and agriculture options. There's increased emphasis on agricultural trade in a major session on Wednesday.

Just last Saturday, I had the Soviet Minister of Agriculture out visiting my farm in Galesburg, Illinois. We had him catching pigs, driving combines, and talking about agricultural cooperation and the future of agriculture. He's a very forthcoming person--a true extrovert and a pretty fair combine driver. If he practices a little, I told him that I might be able to get him a job with us next fall.

In the spirit of cooperation and exchange, he said, "that's fine," but that I would have to send my son to Moscow to help them with their harvest. That was the only way he thought it would work!

Anyway, I would assure you that this session on trade and exports is going to be an interesting one. It's very much on my mind as it is on the minds of everyone throughout the agricultural industry. And its an important part of this conference.

From its very beginning in 1923, the changes in this conference have been philosophical as well as physical. And this 61st meeting offers us the opportunity not only to examine the issues confronting certain commodities but also the chance for us to discuss broader issues which will affect the future of agriculture.

As I said earlier, we're gathered at a crucial time. We're gathering here at the crossroads. We face some difficult times in the agricultural industry today. But as we look to the future, we're challenged to chart a course to insure that out of this adversity will come opportunity.

We know that we have our work cut out for us. The importance of agriculture has been recognized since the birth of this Nation. Our first President made his position clear when he said, "With reference either to individual or national welfare, agriculture is of primary importance." Those words are carved over the entrace to this Department. They are as true today as they were when George Washington first said them.

Because these words are still valid, I want to place a great amount of emphasis on what I consider to be the most important topic this conference will cover--the 1985 Farm Bill. It is likely to be very comprehensive in nature and will, in fact, contain several of the issues that will be covered in some of your other sessions. We've set aside all of Tuesday morning to hear a wide variety of viewpoints on this critical agricultural legislation.

We are ready and we are willing to listen to what you have to say. Over the next three days, there's going to be a lot of talking; there's going to be a lot of listening, too. I encourage all of you to become a part of this dialogue.

The 61st annual Outlook Conference will not answer all of your questions. It will not solve all of our dilemmas. That's not its purpose. Its purpose is to challenge your intellect and your imagination. Its purpose is to help put agriculture permanently on a course towards lasting prosperity.

Once again, I welcome all of you here. I'm looking forward to a terrific conference. I don't think we've ever held one at a more important time in the agricultural industry.

OUTLOOK FOR THE ECONOMY

Rudolph G. Penner, Director
Congressional Budget Office

Annual Agricultural Outlook Conference
Washington, DC, Session 2

For Release: Monday, December 3, 1984

I may be accused of false advertising, but I think I will only spend a short time on the actual economic outlook and talk more about the budget outlook, because the budget is a matter of great importance to the economic outlook in general and to the agricultural sector in particular.

One reason for not saying very much about the economic outlook is that CBO is only in the very first throes of putting together our report on that for 1985. But it appears that the story will not differ greatly from that in our August report, which was pretty positive. We did forecast an economic slowdown, but with a quick resumption of growth. It now appears that the slowdown was a little more severe than we anticipated, but only a very little more.

Nothing that has happened since has dimmed our optimism that economic growth will resume once this slowdown passes. In our view, it has only been a pause, not a precursor of a recession in 1985.

A lot of numbers confirm that. Of course, we can always be fooled by numbers. They sometimes get revised downward or even turn out to be very wrong.

Inventory-sales ratios are very low compared to recent levels. Admittedly, desired inventory levels may be lower than usual. For one thing, real interest rates are unusually high because inflation has gone down. Moreover, computerization helps keep track of inventories more carefully than in the past.

Notwithstanding all of those things, it seems to me that desired levels of inventories could not possibly be much more than those that are being reported today. And desired invento-

ries would have to get a great deal lower than the actual levels to precipitate a serious recession.

Monetary policy seems to have responded to the economic slowdown. Interest rates are lower--I believe that they have fallen enough to start stimulating demand again--and raw material prices, at least over the last month, have not looked bad enough to signal a downturn.

The deficit outlook, however, is not as happy as the economic outlook. And that, of course, has a big effect on certain sectors of the economy. Right now, the deficit may be affecting the composition of our output more than it's affecting the aggregates.

I say that because I believe there is a link between high deficits and high real interest rates. The high interest rates, of course, hit the farm sector immediately.

There is also a link between high real interest rates and the international capital inflows that have been pushing up the dollar. As all of you well know, the high exchange rate grievously harms the agricultural sector.

Economic events since the deficits began to grow in the early 1980s are a little bit surprising. At least, they are surprising to me. In the beginning, we talked a lot about the deficit crowding out economic activity in the United States. We had in mind the crowding out of investment, mainly, and perhaps investment in consumer durables and in housing rather than regular business investment. In fact, this was taken for granted to the point where people rarely were very specific about what would be crowded out.

None of us anticipated that participants in international capital markets would be so willing to finance our budget deficit. The surprising capital inflow since the early 1980s has been very beneficial to the economy as a whole. It has helped us to finance

the deficit, which is another way of saying it has helped us keep interest rates lower than they would have been otherwise.

Through its effect on the dollar, the inflow has also helped us keep inflation lower than it would have been. That effect on the dollar, of course, has transferred the crowding out process from capital formation, where we all expected it to be, to the foreign trade sector--to export industries, and more important, to industries that compete with imports.

So the crowding out has occurred, but it has been a very different way than expected. I repeat that we are better off with that foreign capital than without it. At the same time, I'm not sure I would like to try and convince a farmer or steelworker or autoworker of that fact. The benefits have been to the economy as a whole, while the harm has been very concentrated in a very few sectors of the economy.

While the capital inflow has helped us deal with the deficit, it also creates the biggest risk that our future may not turn out to be as happy as I've pictured it. Drawing on international capital markets means that international investors acquire more and more dollar assets over time. And there is a question as to how many dollar assets they will want to hold. There is some concern--not a great one but still a concern--that at some point the investors in international capital markets will say, "No more. We have no need for more dollars." At that point, the dollar would, of course, fall, and inflation and interest rates would rise.

How would the Federal Reserve System react to that situation? Would they defend the dollar or not? In any case, if the change happened very quickly, it could indeed shock the economy into a recession.

Again, I emphasize that this grim scenario is not one that we at CBO are forecasting. We simply see it as a risk that has to be considered. In contrast, if the dollar were to fall more

slowly, I don't think there would be any real problems. The concern is over an abrupt change in the dollar.

Since the deficit is so crucial to the economy, particularly to the industry that you are interested in, let me talk a little bit about the outlook for the budget.

Last year Congress passed a rather significant tax increase. There were also some expenditure cuts. It may come as a surprise to many that the Congress has been so active over the deficit recently. Conventional wisdom a year ago was that the Congress is incapable of doing anything painful in election years. In fact, these actions lowered the projected deficit in the late 1980s by an amount equal to one full percentage point of the GNP. Now, that's a lot.

In the old days, a fiscal policy change of one percentage point of the GNP would have been considered a major policy change. In the present context--because the problem is so

huge--that change appears to be quite trivial and therefore is referred to as only a downpayment on the deficit. But by previous standards it was a big change. That's the good news.

The bad news, of course, is that that action simply stabilized the deficit at about 5 percent of the GNP. This amounts to a huge sum relative to past deficits--a number that we didn't approach even during major recessions. Deficits of this magnitude are usually experienced only during wars.

Moreover, the 1984 legislative action in no way changed the fundamentals of the budget problem. Two programs are responsible for a very large share of the spiraling deficit: defense and health.

Defense is projected to grow at a 5 percent real rate. Health will be growing rapidly too. In defense the most important fundamental fact is our massive commitments around the world.

While I certainly wouldn't argue that defense is being delivered with utmost efficiency, even the most efficient defense is bound to be costly unless we change our foreign policy.

In health, of course, the most important fundamental is the rapid aging of the population--and the aging of the aged. That is to say, the number of people over 80 is going up much faster than the number over 60.

New technology also plays a role, both in defense and in health. Technology opens up remarkably expensive options for us--from artificial hearts in health to Star Wars in defense. The basic point is that both sectors will continue to grow rapidly unless there are major changes in policy.

The most disturbing growth item in our budget is a nonprogrammatic one--interest on the debt. In CBO's projections it grows from 3 percent of the GNP currently to 4 percent by 1989.

During most of the postwar period, it has generally been between 1 and 2 percent.

The most worrisome effects of deficits take place over the longer run. Moreover, it's possible to discuss the longer-run effects in terms of two very different scenarios. One I call a panic scenario, and the other one merely a disturbing scenario.

In the panic scenario, the deficit becomes so large and so much is added to the debt every year that the interest bill on the debt goes up faster than it can be paid--that is, it is not politically feasible either to cut spending or to raise taxes sufficiently to offset that rise in the interest bill.

What can be done then? An ordinary person whose interest bill is rising very much faster than income would simply declare bankruptcy. I suppose countries could do that, in theory at least, but they have another alternative not open to the rest of us that stems from their monopoly over the creation of money.

When a government reaches the point where it feels it can't cut spending anymore and can't tax anymore and can't borrow anymore because the interest bill is so high, it can turn to the creation of money.

At that point, of course, we are no longer talking about a little bit of inflation. Rather what we are talking about is very similar to the situation now afflicting Israel. The Israelis have been financing government with the creation of money, and the inflation rate is so high now that it is hard to measure. Some people say it's over 600 percent per year.

A friend of mine who has just returned from Israel said that he saw a sign in a shop that read, "We take shekels." That tells you a great deal about what can happen in an economy experiencing hyperinflation.

We are a long, long way from the Israeli situation, but in some projections CBO made last February, the deficit was rising,

while the interest bill was rising at increasing rates along a path that was concave from above. Projected out to the 1990s, the interest line started going straight up. I think something akin to panic might have been appropriate if we had thought the country would go down that road very far, but we didn't think that. And, of course, the country didn't take that road. We were in an unstable situation in the sense that it was not feasible to continue that fiscal policy forever. But our political system responded. The Congress did enough to take us off the unstable road and put us on a stable road--but I must say, only barely.

A bit of bad economic luck could put us back on that unstable road again. Yet the legislated down payment on the deficit has bought us a lot of time, and that is why it was so important.

If we don't have to worry about the unstable situation in which the deficit is so huge that it feeds on itself, then we can turn to more traditional concerns about the effects of deficits. The most important one involves intergenerational equity.

At the beginning, I suggested that I thought a growing deficit would be very destructive to capital formation. In turn, that would reduce the potential for growth in the future and mean lower standards of living for our children and grandchildren. It would take a long time, of course, before it's noticeable. Indeed, a typical economic growth model would suggest that you can eat, drink, and be merry for as long as 20 years before you have eroded your capital stock to the point where both consumption and investment have to fall.

In any case, that process does not seem to be occurring. We have been able to keep domestic capital formation high by drawing on international capital markets. But that is also costly to future generations, because more and more of our future production will be devoted to servicing debt. In the first case, where domestic capital formation falls, production falls. The second case, where all the deficit is financed with international money, production doesn't fall but an ever larger share of it has to be devoted to paying interest and dividends to foreigners.

Under this scenario, there may be no reason to panic, but the deficit is still a very disturbing issue. Some would call it a moral issue. How many resources should we take away from our descendants to spend on ourselves?

What are the options for doing something about all of this?

On the spending side the most important thing to know about the federal budget is that most of the money goes for very few items. Probably I'm not telling you much that you don't know already, but it is a point that is absolutely crucial to the current budget debate.

I have mentioned defense and health as expenditures that are growing very rapidly. These programs also are already very large. In health, Medicare is the dominant program and it is the one that you have to watch in looking at future budget trends.

I haven't mentioned another huge program yet because it's not growing very much--namely, Social Security. It is only growing at about the speed of the economy and as the rest of the budget. Nevertheless, it's so big already that it's very important in any budget discussion.

Indeed, if you add up defense, Social Security, Medicare, and the interest bill on the debt, you have in CBO's projections an amount of spending that equals approximately 90 percent of the revenues that we project for the late 1980s.

The other 10 percent have to finance welfare for the poor, foreign aid, highways, agriculture programs, FAA, student loans, and so on through all the different areas of government. These other programs are, essentially, trivial compared to the big four.

For these reasons, it is very hard to imagine dramatic changes in federal spending unless reductions are made in the four big programs or unless the programs in the rest of the

budget are radically changed. When I say radical, I mean doing away with many things that the federal government has done traditionally.

On the tax side, there are only three basic options. We can raise rates in our current tax system. Economists, regardless of ideology, don't like that because they feel the worst thing about our current system is that we have eliminated so much income from taxation. They would prefer the so-called tax reform or base-broadening approach taken in bills like Bradley-Gephardt, Kemp-Kasten, and now the Treasury Department proposal.

The third approach is to create new taxes such as a value added tax or some new energy tax. This option has not been in the press much recently, but I think it's a little more complicated than public discussion has led us to believe. I don't want to demean the notion of a value added tax or some new energy tax, but it is very difficult to design a new tax. A value added tax, if the experience in other Western democracies tells us anything, would have several rates. We would have to hire 10,000 to

20,000 new revenue agents to administer the whole thing. So, it's not a really simple matter to start from scratch and create some new tax. But again, I don't want to say that this means it is a terrible idea.

Let me stop, though, at that point and take questions.

OUTLOOK FOR AGRICULTURE

OUTLOOK '85

James R. Donald, Chairman
World Agricultural Outlook Board

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AGRICULTURAL OUTLOOK

Agriculture has undergone significant production and marketing adjustments in the past year in response to greatly reduced crop output. The season ahead appears to be one of further adjustment, but to large commodity supplies and slow demand growth.

U.S. crop production dropped more than one-fourth in 1983/84. Yields were reduced by the worst drought in 50 years and a record amount of land was taken out of production under Government acreage-reduction programs. Crop prices rose sharply, resulting in higher feed prices and reduced returns to livestock producers. The squeeze on returns caused a cutback in inventories, particularly for hogs.

Crop farmers in 1984/85 responded to higher prices and U.S. acreage is up more than one-tenth from 1983's reduced level. Growing conditions improved and the average yield also is up more than one-tenth. The 1984/85 indicated output increase of one-fourth is putting pressure on crop prices, while lowering feed costs to livestock and poultry producers.

U.S. commodity demand has picked up with growth in the U.S. economy and continued recovery in several countries abroad. However, demand growth lags the increase in production and significant increases are in prospect for 1984/85 crop carryover stocks. Domestic use of coarse grains and soybean meal is expected to increase in response to larger poultry output and improved livestock feeding margins, while increased textile imports may reduce U.S. cotton mill use.

The volume of U.S. exports may increase slightly in 1984/85, but record crops abroad and the relatively strong U.S. dollar will moderate export gains. U.S. grain exports should expand in spite of much larger production in some countries, particularly the European Community, as Soviet purchases push up trade levels. Soybean exports should benefit from lower prices, while U.S. cotton exports are expected to fall with increased production abroad.

U.S. crop prices in 1985 are likely to remain under pressure from large global supplies. Meat supplies are expected to remain large, although a little below 1984, and livestock prices should average higher.

Larger crop marketings and higher livestock prices may lead to higher cash receipts to U.S. farmers in 1985. Continued moderate increases in inflation should hold down the rate of increase in production expenses next

year, although expenses may be up a little more than cash receipts. Government payments are likely to be lower. So, net farm income is not likely to match 1984's inventory-boosted level. The sharp rise in estimated 1984 income to nearly double the 1983 level of $16 billion, primarily reflects a sharp increase in the value of crop inventories. Net cash income, before inventory adjustment in 1984 is expected to fall from 1983's record level of $40 billion, as the rise in production expenses exceeds the gain in cash receipts.

Large commodity supplies and the moderate inflation rate are limiting this year's increase in food prices to about 4 percent. Continued slow inflation and large commodity supplies in 1985 are likely to mean another year of moderate food price rises.

The U.S. Congress will consider new farm legislation in 1985 to replace the expiring Agriculture and Food Act of 1981. Many changes have occurred during the course of the 1981 Act and significant change is expected in the years ahead. Changes in U.S. agriculture have been brought about by ties to the general economy at home and abroad and links to agricultural developments abroad. A worldwide recession has slowed the demand for agricultural products in the 1980's, while global production capacity remains large. This has resulted in slow growth in global agricultural consumption and has meant increased competition from other countries for international markets. U.S. agricultural exports were hurt further by the strong dollar and higher prices for U.S. products in markets abroad.

The years ahead are likely to see U.S. agraiculture more closely tied to other sectors of the economy around the world and become even more closely linked to agricultural developments in other countries. Greater interdependence and more intense competition for global agricultural markets may be spurred by worldwide adoption of new productivity-expanding technology. It is within this environment that new legislation will be considered--an environment that already promises large global agricultural production capacity and slow demand growth, but one that also holds much uncertainty about the future.

Global Setting

The global crop outlook is highlighted by sharply higher production in the United States and the European Community and even larger output than last year in China. These large crops abroad more than offset expected smaller production in the Soviet Union, Canada and Australia; therefore, record production is expected outside the United States for wheat, coarse grains, rice, soybeans and cotton. World sugar production is indicated larger. World meat production is expected to be slightly higher in 1985, primarily because of increased poultry output. Also, milk production could be up slightly as reduced output in the European Community is offset by another increase in Soviet production and continued growth in many of the smaller producing countries.

Continued global economic recovery and a high level of meat output are stimulating global crop use, although dampened feed demand in the EC dairy sector and lingering financial problems in some developing countries are

moderating demand growth. So, consumption gains are not expected to match the rise in production, pointing to increased global stocks and continued pressure on crop prices.

Global and U.S. agricultual trade are expected to expand in 1984/85. Much larger Soviet imports are boosting the level of grain trade. Demand for soybeans and products should benefit from a little higher level of feed use and lower prices for soybean meal. While global cotton trade is expected to expand, U.S. exports likely will be down because of increased production in other countries.

Crop Acreage

Global crop area is slightly higher in 1984/85, with cotton and soybean area showing the most increase from 1983/84. Larger global area is primarily in response to expansion in the United States from last year's reduced level. A record amount of cropland was removed from production in 1983 under Government acreage-reduction programs, dropping the U.S. share of global area to the lowest level since 1972. Even with the gain in 1984 acreage, the U.S. share is well below the early 1980's.

Crop Production

World crop production is estimated at record or near-record levels in 1984/85. Production in other countries is at a record level for wheat, coarse grains, rice, soybeans and cotton. Favorable growing conditions have pushed up crop yields abroad, particularly in the EC and China.

U.S. crops are not at record levels, but the combination of increased acreage and improved yields is resulting in a larger U.S. share of global output. As with acreage, however, the U.S. share remains below a few years ago.

Crop Consumption

Global crop consumption is responding to economic growth and larger crop output. Still, the rate of increase in consumption is well below the production increase.

The consumption gain is being moderated by lagging economic recovery and lingering financial problems in several countries. The overall economic growth in 1985 in developing countries is likely to slightly exceed the 1984 level, but remain well below the gains achieved during most of the 1970's. Industralized countries could see a smaller gain in 1985.

Consumption of feedstuffs should show a modest increase in 1985. Global meat output is expected to show a slight gain, primarily because of expanded poultry production. Feeding rates should be higher for cattle and hogs, but consumption by the dairy cow herd may be dampened by milk reduction programs.

U.S. crop consumption levels are expected to increase moderately in 1985, except for wheat and cotton. While U.S. meat production is indicated at a slightly lower level in 1985, feeding rates are likely to pick up as producer returns improve.

U.S. crop consumption is trending downward as a share of global use. U.S. producers are increasingly looking to world markets as an outlet for crop production.

Crop Stocks

Global crop stocks in 1984/85 are expected to show significant increases from low carryin levels, except for wheat where a moderate increase will be from an already high level.

Much of the increase in global stocks will occur in the United States. U.S. stock increases will be the greatest for cotton and coarse grains. The U.S. share of global stocks has been rising over the years, reaching a record of nearly 60 percent for grains and soybeans in 1982/83.

Crop Trade

International trade is showing a moderate expansion in 1984/85. Grain trade is being boosted by much larger Soviet imports, caused by a reduced crop. China's import will continue to be dampened by increased domestic production.

The volume of U.S. exports is likely to increase slightly in 1984/85, as gains for grains and soybeans offset lower cotton and meat product exports. However, the value of U.S. exports is expected to be down from 1983/84's $38 billion.

The U.S. share of global trade has been slipping since the late 1970's. Expanded production abroad and the strong dollar have cut into the U.S. trade share.

U.S. imports of agricultural products are expected to remain at a high level in 1984/85, although a slower growth in the economy may moderate imports. In 1983/84, imports rose to nearly $19 billion, about 15 percent above the year-earlier level.

Prices

Global commodity prices are under pressure from large production and only a modest expansion in consumption. Crop prices should show seasonal increases in coming months, but prices will be sensitive to crop developments in the Southern Hemisphere.

U.S. crop prices in 1984/85 are expected to average below year-ago levels. Slightly lower animal product output and continued growth in the economy should mean higher U.S. livestock prices in 1985. However, broiler prices may be lower if broiler output shows the expected increase; and milk prices probably will be down with lower support levels likely.

U.S. AGRICULTURAL OUTLOOK

U.S. commodity supplies are large and farm prices are under pressure. Crop output is up sharply because of expanded acreage and increased yields. Use is showing a more modest rise than output, so prospects are for a

significant rebuilding of small carryin stocks of feed grains, soybeans and cotton. Meat output remains at a near-record level because of much larger broiler production and a little more beef. The commodity outlook for 1985 is for a continued high level of production and slow demand growth.

Farm Income

Commodity prices are expected to average moderately higher in calendar 1984 because of tight crop supplies in the first half of the year and slightly smaller meat supplies in the second half, coupled with relatively strong consumer demand. A slight decline in meat production should help support livestock prices in 1985, while large supplies from 1984 crops may pressure crop prices.

Marketing receipts are expected to increase slightly in 1984, reflecting higher prices. However, production expenses are expected to be up more. Expenses are up for a number of items, including manufactured inputs and interest charges. Farm-origin input expenses are expected to be slightly lower in 1984, particularly feed costs.

With production expenses up more than cash receipts, net cash income is expected to decline from 1983's record $40 billion. Net farm income, however, may nearly double 1983's reduced level of $16 billion because of the prospective sharp increase in crop inventory value in 1984.

The calendar 1985 outlook is for a further modest gain in marketing receipts in response to slightly higher livestock prices and increased crop marketings. While production expenses may be up only moderately, they may be up slightly more than cash receipts. Also, Government payments are likely to be lower in 1985.

Producer returns next year will importantly depend on crop growing conditions and economic developments here and abroad. U.S. acreage-reduction programs for 1985 are similar to 1984, when about 29 million acres were removed from production. Economic growth in the United States is likely to slow, while uneven growth may continue in other countries.

Food Supplies

Food supplies are large in 1984. Meat supplies were at a record level in the first half of the year, while crop output is up sharply in the second half. Marketing costs are showing a moderate rise in 1984, reflecting slow inflation in the economy. Retail food prices are expected to be up only around 4 percent in 1984. In 1983, food prices rose only 2 percent, as the drought and higher feed costs contributed to increased livestock slaughter and record meat supplies.

In 1985, continued moderate increases in marketing costs and large commodity supplies should mean another year of moderate food price increases. Among the commodities, red meat supplies may be a little smaller than in 1984, while poultry meat supplies are likely to increase further. Crop supplies are expected to continue large, although as usual, fruit and vegetable supplies will be particularly sensitive to weather developments.

LONGER-TERM OUTLOOK

Today's agriculture is the product of increasing change over the years--change in the past 50 years probably exceeded the previous 100 years and each decade brings greater change than the one before. Much of the change in recent years has resulted from closer ties to general economic developments and policies here and abroad. Further significant change is expected in the next decade because of: ever-changing global economic conditions; rapid technological advances, which likely will bring growth in production capacity and shifts in demand for agricultural products; and a growing dependence of U.S. producers on increasingly competitive world markets.

Congress will considering 1985 farm legislation in this environment of change and an uncertain future--but a future that already points to a large global capacity to produuce agricultural products and slow growth in market demand.

In the 1970's, global capacity to produce agricultural products expanded in response to increased consumer demand. In the 1980's, global production capacity remains large, while consumer demand growth has slowed. Development and adoption of new technologies are expected to further increase production capacity in the latter half of the 1980's.

Future agricutural supplies are expected to continue to be strongly influenced by general economic conditions, including interest and inflation rates, which impact directly on production costs and profitability, both in the United States and in other countries. In some other countries, however, such as Brazil and Argentina, Government measures are taken to offset the adverse impact on production of rapidly rising inflation or higher interest rates.

Global demand for agricultural products may expand slowly over the next several years. The world-wide recession of the early 1980's dampened demand, particularly in developing countries, and slow recovery is likely over the next several years. In the more industralized countries, where meat consumption levels already are high, there is much less potential for growth in animal product consumption and demand for feedstuffs than in most developing countries, although changing consumer tastes and preferences are likely to bring significant shifts in demand among the various foods and fibers. In countries with centrally planned economies, there is much uncertainty about the future demand for agricultural products, with unknowns relating both to the level of actual needs and the willingness to depend on other countries to meet agricultural product consumption goals.

Global economic and trade and agricultural policies of other countries are expected to be especially critical to U.S. agriculture, given the United States' relatively free-market posture in the world market. For example, policies of the European Community have caused a transition to surplus production of grains, sugar, and animal products, and resulted in the Community becoming a net exporter and competitor in world markets. China was a major importer of U.S. cotton a few years ago, but today is an exporter. U.S. agricultural price support programs also can affect exports by keeping U.S. prices above competitive world levels.

While the outlook for the rest of the 1980's is for a continuing imbalance of global agricultural production capacity in relation to market demand, it should be noted that potential global supply and demand and U.S. exports are subject to much uncertainty. Among other developments, policies of several large countries are likely to have a considerable influence on global conditions. China, for example, has much potential for expanding meat consumption, which would require significant quantities of feedstuffs. If consumption increases, the key uncertainty is whether animal feed needs could be met by expanded domestic production alone, or whether increased imports will be necessary. Even though China turned more to world trade several years ago, particularly for wheat and cotton, agricultural imports have dropped recently and represent a small portion of domestic needs. This has been the result, to a large degree, of extraordinarily good weather and of changes in China's approach to agriculture, such as going from a more socialized approach to providing a more private incentive oriented system. In contrast, the Soviet Union, has become more dependent on agricultural imports to meet domestic needs, particularly for grains. Here, too, there is considerable uncertainty about the outlook for imports, given Soviet goals to expand agricultural output. Much of this uncertainty revolves around the types of changes that may be made to expand output.

The outlook into the 1990's is clouded with even more uncertainty, in view of potential technological developments, particularly the newer biotechnologies. Improved efficiencies in animal product production, for example, may result from multiple births and better disease control; and plant yields may be increased through bioregulation and tissue culture technologies and through genetic engineering.

There is potential for rapid adoption of technological products around the world, given the international scope of many agricultural input suppliers, such as the newer biotechnology companies and seed companies, which have a vested interest in the use of their products. Agricultural producers may have to take advantage of technology to remain competitive in world markets. Producers are expected to increasingly have computers available to analyze technological and other impact on commodity supplies and markets.

Technological breakthroughs into the 1990's could bring very significant changes in production and marketing of farm commodities, together with important shifts in consumer preferences among food and fibers. Congress will be faced with the challenge of designing flexible programs for an uncertain future. The situation is becoming more critical every 10 years as the change that occurs is probably greater than the previous decade. And, with biotechnology and other breakthroughs, it does not look like this trend is going to change.

THE ECONOMIC OUTLOOK FOR FAMILIES

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The year 1984 appears to be ending with a bout of nervousness as forecasters and investors digest the latest monthly statistics on the economy showing that the growth in real GNP slowed sharply in the third quarter. Moreover, there are signs suggesting that things may be getting worse. Going into the last quarter of the year, the October index of leading indicators slipped seven-tenths of 1 percent. Clearly, the first half of the year was a hard act to follow, as real GNP grew a dazzling 10 percent in the first quarter and 7 percent in the second. In line with this performance, the Index of Consumer Sentiment -- an index of families' evaluations of their own financial situation and that of the economy -- reached a higher point than at any time during the previous decade. 1/

On the brighter side, inflation has not accelerated since the first quarter of 1984 as some had anticipated, and interest rates in the fall of 1984 are turning down, having been above 1983 levels for much of the year. Optimists see these inflation and interest rate developments as the ingredients for future steady growth and regard the slowdown in the second half of 1984 as a desirable cooling-off period. Pessimists, however, are more impressed with the recent news of sluggishness in the economy and foresee a prolonged period of slow growth, with possibly even another recession in the near term.

1/ The index is compiled by The Survey Research Center of the University of Michigan. See "Consumer Confidence Withstands Interest Rate Gremlins" by Richard T. Curtin in Economic Outlook USA, Summer 1984, published by The Survey Research Center.

The economic outlook for the family depends on whether the optimist's or pessimist's scenario is correct. Since 1973 the economy has been in a period of unusually slow productivity growth. Output per hour of labor input increased by 3.3 percent a year from 1948 to 1965, by 2.3 percent a year from 1965 to 1973 and by only 1.2 percent a year from 1973 to 1978. 2/ Between 1978 and 1981 productivity growth virtually ceased. Output per hour appears to have increased substantially in 1983 and the first half of 1984. This situation could, of course, simply reflect a cyclical recovery pattern. The real question then is whether productivity growth rates will return to the level of the 1950's and 1960's or remain at the levels of the 1970's. The causes of the productivity slowdown are not well understood, so it is difficult to make predictions.

In my talk today I will first discuss how recovery from the 1982-83 recession will affect the family's economic status. Then I will turn to the longer term and the intertwined issues raised by economic growth, the changing structure of the family and the change in women's economic role.

The Near Term: Will Recovery Lower the Poverty Rate?

Between 1979 and 1982 the official poverty rate for all persons rose from 11.7 percent to 15.0 percent (Table 1). This sharp increase, combined with the fact that the rate had barely declined over the preceding decade led to widespread concern that earlier long term gains in reducing poverty had been eradicated in the space of a few years. Moreover, while many had expected that the rate would decline in 1983 it actually edged up further - to 15.2 percent of the population, adding to the concern.

If we go back in time, what we find is that the poverty rate for individuals fell rapidly during the 1960's - from 22.2 percent in 1960 to 12.1 percent in 1969. It was bumped up a bit by the recession of 1970 and then fell to its lowest point historically -- 11.1 % -- in the 1971-73 expansion. After that, the deeper recession of 1974-75 raised the rate and the following expansion lowered it again. Sluggish economic growth and the high unemployment years of 1980-1983 appear to be the cause of the recent rise in the poverty rate. Moreover, the poverty rate did not decline in 1983 because unemployment did

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2/ See J.R. Norsworthy, Michael J. Harper and Kent Kunze, "The Slowdown in Productivity Growth: Analysis of Some Contributing Factors," Brookings Papers on Economic Activity 1979:2.

not decline in 1983. In fact, the unemployment rate for all individuals in the labor force was 9.5 percent in both 1982 and 1983, 3.7 percentage points above the 1979 level; and the duration of unemployment continued to rise in 1983. Thus, 24 percent of the unemployed had been unemployed for 27 weeks or more in 1983 compared to 17 percent in 1982.

The upturn in the economy from 1983 to 1984 has already reduced unemployment substantially. By the third quarter of 1984 the unemployment rate had fallen 2 whole percentages points below the 1982 and 1983 levels - almost to the level of 1980. How much the poverty rate will fall depends, of course, on how much of the increase in fact can be attributed to recession. Certain cuts and changes in transfer programs were implemented in 1981 and they may have pushed some families into long term poverty. To the extent this is the case, poverty may fall more slowly as the recovery proceeds.

A recent study by Blank and Blinder suggests that economic recovery will once more reduce the poverty rate to its pre-recession level. 3/ Using statistical time series analysis of the relation between the poverty rate and unemployment, they find that the slow growth and high unemployment of the 1973-1983 decade raised the poverty rate by 4.5 percentage points. This effect is large and reflects an additional finding of the Blank and Blinder paper -- that the impact of unemployment is particularly severe on low-income households. Based on their results, the authors estimate that the poverty rate will fall to between 11.1 to 11.5 percent by 1989. (The higher estimate assumes that the unemployment rate will fall to 7 percent - the lower estimate assumes an unemployment rate of 6.3 percent in 1989).

Will persons in families headed by women (without a husband present) also share in the poverty decline? The colorful phrase "Feminization of Poverty" refers to the fact that a disproportionate share of the poor are in such families or are women living alone. Persons in female-headed families have increased as a percentage of the poor over the long term, both because they have increased as a percentages of the population and because their poverty rate, while having declined, did not decline as fast as that of the rest of the population. During the period 1979-1983, however, this demographic group declined as a percentage of the poverty population, even though they

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3/ See Rebecca Blank and Alan S. Blinder, "Macroeconomics, Income Distribution, and Poverty," paper to be presented at the Conference on Poverty and Policy: Retrospect and Prospects, Williamsburg, Virginia, Dec. 6-8, 1984.

continued to increase their share of the total population. This occurred because their poverty rate did not rise as much as the rate of other groups. Among the group of women heading their own families the increase in poverty that did occur during the recession was largely confined to those who are out of the labor force (primarily full-time homemakeres). This group is more likely to depend on welfare benefits, and since States have not increased benefits enough to compensate for inflation, welfare beneficiaries have experienced reductions in their real cash incomes. The percentage of women heading households who work full-time year-round did not fall between 1979 and 1983 (remaining at about 36 percent of the group) and poverty for these working women did not rise significantly.

In terms of income and earnings, one notable pattarn of the recession has been that women's income and employment has held up better than men's. During 1982 and 1983 the unemployment rate of adult men was higher than for adult women, reversing the usual pattern. In addition, the ratio of women's earnings to men's earnings rose between 1979 and 1983, resulting in a narrowing of the wage gap. For full-time year-round workers this ratio rose from 60 percent to 64 percent. In terms of hourly earnings, the ratio rose from 68 percent to 72 percent. One reason for women's relative gain is that blue collar industrial employment is more vulnerable in a recession than white collar employment in the service sector, and women are disproportionately represented in the latter. In addition, however, there is some evidence that women have been increasing their work experience and schooling relative to men, factors that would create more lasting gains. 4/ The employment of wives was one factor that prevented family income from eroding more than it might during the 1979-1983 period. Married couple families in which the wife was in the labor force experienced smaller income loses than other families. Thus the decline in income (after adjusting for inflation) was 10 percent among those families in which the wife was not in the labor force, compared to a 6 percent decline among two-earner families. The increase in the labor force participation of wives between 1979 and 1982 -- from 49 percent to 51 percent, also helped cushion the effects of the recession.

Longer-Term Issues

Several important questions have been raised about the longer term trends that can be expected once the economy does recover from the severe recession of the early 1980's. Will the

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4/ See June O'Neill, "The Trend in the Male-Female Wage Gap in the United States", forthcoming Journal of Labor Economics, Jan. 1985.

poverty rate, even if it does decline to the 11.7 percent rate of 1979, remain stuck at this level as it seems to have done during the 1970's despite increases in government benefits for the poor? Is the middle class eroding while the economy becomes polarized into the rich and the poor? Will the family survive as an institution?

To start with the last question first -- the structure of the family has undergone considerable change over the past 25 years. In 1960, three-fourths of households consisted of married couples and their families; in 1984 such families represented only 59 percent of all households. Several developments account for this statistic. One is the rise in families headed by women, a group which increased from 10 percent to 16 percent of all families between 1960 and 1984 (and from 8 percent to 12 percent of all households). Underlying this trend is a sharp increase in divorce, a rise in out of wedlock births, and an increasing tendency for women with children to set up their own households rather than move in with relatives.

Another pattern that has left its mark on household structure is the increase in single individuals. Between 1960 and 1984 the proportion of households consisting of a person living alone rose from 13 percent to 23 percent. Underlying this change is a substantial increase in the number of young adults (the baby boom generation), coupled with a substantial rise in the age of first marriage. An increasingly large proportion of men and women are delaying marriage into their late twenties and early thirties. In 1984, 21 percent of men aged 30 to 34 had never been married - up from just 9 percent in 1970. Among women the incidence of singleness rose from 6 percent to 13 percent at ages 30 to 34, and from 11 percent to 26 percent among ages 25 to 29.

All of those trends differ in degree by race. Marital dissolution has increased more sharply for blacks than for whites and both first marriage and remarriage rates have been lower for blacks. As a result the percentage of black families headed by a woman without a husband increased from 22 percent in 1960 to 42 percent in 1983, compared to an increase over the same period of 8 percent to 12 percent among whites.

The factors explaining these changes in family structure are by no means thoroughly understood, but several possibilities are worth speculating about. Undoubtedly, the function of families has shifted since the beginning of the century when production in the home was, for the average family, relatively more important than it is today. Fertility was considerably higher -- the average woman gave birth to 4.7 children

(compared to less than 2, today). The feeding and rearing of children and the home production of much of the goods consumed by the family led to a clear division of labor in the family, which tied women to an 84 hour work week in the home. In 1900, less than 6 percent of married women had paid jobs outside the home. Over the century these circumstances changed, in large measure as a response to the rise in the market wage and the availability of technology which provided low cost substitutes for many of the chores once performed in the home. Today, more than 50 percent of married women are in the labor force, and among married women under the age of 45 the percentage well exceeds 60 percent.

As a result women can more readily become financially independent. Some research indicates that the increase in women's earnings and employment has increased marital dissolution. (It is also the case, however, that divorce and expectation of divorce increase women's labor force participation.) Financial independence has also been provided by the growth in welfare benefits and other transfer payments and this too is believed to have contributed to marital dissolution among women with lower earnings prospects. 5/

There are two schools of thought about the possible effects on marriage and family of an increase in economic growth. One theory associated with the economist Richard Easterlin anticipates that productivity growth and earnings will increase as the smaller birth cohorts replace the large baby boom cohort in the labor force market. Easterlin further expects that rising wage rates for men will lead to increases in desired family size, a factor that would inhibit women's continuing development of careers outside the home. This theory suggests some retrenchment to earlier family patterns.

Others, for example the economists Michael Ward and William Butz, believe that rising real wages will exert a continuing pull on women's entry into the labor force, reinforcing the tendency for reduced fertility. Whether families will become less coherent as a result of such a continuing trend, is simply not known. It is possible, for example, that delayed marriages will prove to be more lasting and that increased sharing by fathers in the rearing of children will cement marital bonds.

5/ See, for example, Sawhill, Isabel, Gerald E. Peobody, Carol A. Jones, and Steven B. Caldwell, 1975, Income Transfers and Family Structure, Washington, D.C.: Urban Institute, and Groeneveld, Lyle P., Nancy Brandon Tuma, and Michael T. Hannan,01980, "The Effects of Negative Income Tax Programs on Marital Dissolution," Journal of Human Resources, 15 (Fall): 654-674.

The changes that have occurred in family structure have affected other institutions including statistics on income and poverty. Female headed families, particularly those with children, are more likely to have low incomes than husband-wife families. Fathers do not provide child-support in many cases, or such support is low, and it is difficult to work full-time when small children are present. Mary Jo Bane has calculated that if household structure had remained as it was in 1959, while the poverty rate for each household type changed as it actually did, the overall poverty rate in 1979 would have been 7.8 percent instead of 9.1 percent for whites, and 24.2 percent instead of 30.9 percent for blacks.

The failure of poverty to decline in the face of large increases in transfer programs during the 1970's has also been noted. Between 1974 and 1983 federal transfer programs that were means tested increased by 60 percent after adjusting for inflation. [Included in this calculation are federal outlays on the SSI and AFDC programs, food stamps, child nutrition programs, housing and medicaid. State and local expenditures on these programs are excluded; the number of poor persons also increased, but by less - 51 percent.] One reason that these increases in government spending did not reduce poverty is that an increasing proportion of these transfers were in the form of noncash benefits that are not counted as income. Estimates by the Census Bureau suggest that if these benefits were included at their market value, measured poverty rates would be substantially lower, particularly for female headed families with children, whose poverty rate in 1979 would have been reduced almost in half.

Economic growth, however, will also help female headed families since these families also depend on earnings. Moreover, rising and more stable earnings of prospective husbands may prevent dissolutin of marriages and encourage remarriage.

It is sometimes hard to distinguish trends from cyclical patterns. Some of the income patterns of the 1970's that have been labelled trends seem likely to have been due to prolonged high unemployment. One is the much discussed increase in inequality of income and the supposed disappearance of the middle class. While there was a small increase in inequality of income, it could hardly be described as a polarization of the income distribution. Moreover, as the paper by Blank and Blinder shows (see above), high unemployment can account for the increase in inequality. In addition, the large size of the baby boom cohort entering the labor force produced some inequality both because of the change in age mix and because the earnings of the large number of inexperienced workers were at least temporarily depressed relative to older cohorts.

The future course of the family and of the incomes of Americans is related to complex and interrelated changes. It will be fascinating to see how the scenario unravels.

Table 1. Indicators of Unemployment, Poverty and Income, 1979-1984

	1979	1980	1982	1983	1984 III
Unemployment rate (percent of civilian labor force in group)					
All workers	5.8	7.1	9.5	9.5	7.5
Men 20+	4.2	5.9	8.8	8.9	6.5
Women 20+	5.7	6.4	8.3	8.1	6.9
Married men, wife present	2.8	4.2	6.5	6.5	4.5
Women maintaining families	8.3	9.2	11.7	12.2	10.0
Percent without work:					
15 weeks or more	20.2	24.5	32.6	39.3	30.9
27 weeks or more	8.7	10.7	16.6	23.9	18.0
Poverty Rate (percent of population in group)					
All persons	11.7	13.0	15.0	15.2	n.a.
Persons in female-headed families	32.0	33.8	36.2	35.7	n.a.
Persons in all other families	7.0	8.0	9.8	10.0	n.a.
Unrelated individuals	21.9	22.9	23.1	23.4	n.a.
Median Income (in 1983 dollars)					
All families					
Husband-wife families	29,515	27,977	26,852	27,286	
Wife not in labor force	24,364		21,981	21,890	
Wife in labor force	34,256	32,497	31,313	32,107	
Female-headed family (no husband present	13,626	12,583	11,851	11,789	

Table 1. Indicators of Unemployment, Poverty and Income, 1979-1984 (continued)

	1979	1980	1982	1983	1984 III
All men	16,168	15,149	14,396	14,631	
Full-time, year round worker	23,992	23,179	22,348	22,508	
All women	5,974	5,948	6,075	6,319	
Full-time, year round worker	14,445	14,012	14,100	14,479	

THE OUTLOOK FOR U.S. AGRICULTURAL TRADE

OUTLOOK '85

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The volume of U.S. agricultural exports is forecast to increase for the first time in five years in fiscal 1985 -- up 4 percent to 149.5 million tons. However, lower prices may cause a decline in value to $36.5 billion, down 4 percent from $38.0 billion in fiscal 1984.

Agricultural imports for fiscal 1985 are expected to be marginally above last year's record and reach $19.0 billion. The agricultural trade balance for fiscal 1985 is forecast at $17.5 billion, down 8 percent from the previous year.

The Current Trade Setting

It is encouraging that volume will be up. The price picture reflects abundant global supplies and a competitive situation that did not exist during the spectacular gains in U.S. agricultural trade that were made in the 1970s. Those were unusual times triggered by unusual circumstances, the combination of which is not likely to be repeated.

We are going to have to work harder for our export markets even as global economic recovery stimulates increased demand for agricultural products. We must expect export markets to be more competitive for the remainder of this decade than they were five or ten years ago.

In my view, we are in the midst of the most competitive decade in farm export markets that the world has ever seen. Virtually everywhere in the world, farmers have more production potential and more incentive to use it. New developments in production technology, aided by genetic engineering, mean that record-shattering increases in production may be the norm rather than the exception. For the European Community as a whole, wheat production this year exceeded that of the United States--in part due to new higher yielding varieties. In Britain, new winter barley varieties have added a million tons a year to British cereal production. In China, farmers are producing record crops of wheat, coarse grains, rice, oilseeds and cotton.

This revolution in productivity brings with it its own set of problems. Demand in the context of world trade is not keeping pace with production. In part, many countries are still emerging from the recent recession and are not consuming as much as they would, given stronger economic conditions. But overcapacity relative to demand also exists because of government involvement with agriculture.

Governments--particularly in the developed world--have provided more incentives for agricultural production than current market realities reasonably dictate. These same incentives also discourage producers from adapting to the economic realities of today's world.

In short, the major surge in agricultural productivity the world is experiencing means the competition is just beginning to heat up. I think U.S. farmers welcome competition, as long as they have a chance to compete on equal terms. Unfortunately, that has not been the case. Many governments have reacted to domestic pressures for farm income support by restricting imports or subsidizing exports--or both.

Because it has proved so difficult to get rid of export subsidies and other non-tariff barriers to agricultural trade, the GATT members set up a Committee on Trade in Agriculture in November 1982.

After a preliminary review of national policies, which focused attention on the seriousness of the problem, the committee set out two objectives.

The first objective is to develop a comprehensive, new approach for dealing with barriers to imports. The aim is to assure that all non-tariff measures will be subject to GATT rules, and that the rules will be more effective in preventing domestic programs from interfering with international trade.

While this was a very broad agenda, it reflects a recognition of the problem both in terms of its nature and its scope, and it reflects the desire of many countries to work toward a solution.

The second objective addresses export subsidies and other forms of export assistance. It too is broadly stated and two approaches will be considered: New provisions should be elaborated to prohibit export subsidies with certain limited exceptions, and existing rules governing subsidies should be strengthened.

We hope this program will prove to be the breakthrough we have been hoping for on trade problems. We welcome the opportunity to press for meaningful resolution of these questions.

Vulnerability of Agricultural Trade

Almost every nation has tried to solve its farm problems by using trade restrictions or subsidies of one form or another.

And all countries, not just the largest exporting nations, have suffered from the resulting destabilized trade, the rising discord in trade relationships, low farm prices and high government costs.

The United States believes that market forces, not government, should be the primary influence on the movement of trade. Let me give you an example of the damage done when countries forget this principle.

EC policies that encourage sugar production and export of the surplus by using subsidies contribute to sugar oversupplies and depressed world prices, which are particularly damaging to developing countries that depend on sugar exports to earn much of their foreign exchange.

Comparing world stock ratios against price, we calculate that EC sugar policy has reduced world sugar prices by at least 4.75 cents per pound and perhaps by as much as 18 cents, depending on the role assigned to EC net exports in the analysis. It is probably realistic to say that for the past three years, the price impact has been midway between the two--10 to 12 cents. This means that EC sugar policies have cost the sugar-exporting developing countries about $2 billion a year in lost export earnings.

Increased Competition Calls for a Flexible Agriculture

Agriculture today is an international activity, and trade policy must be flexible enough to respond quickly to changes in the market without government interference.

No single country can make it happen. The events of the recent past show more clearly than ever that the approach has to be multilateral.

However, we are going to have to recognize that one of the major stumbling blocks to this goal has been of our own making. Our farm support system has been an enticing incentive for our competition to go after the quick buck rather than negotiate for long-term benefits for all farmers.

Our current programs have no provisions to adjust for falling market prices, a stronger dollar, or slumps in world demand which can leave the United States with farm support prices above market-clearing levels. And without such provisions we cannot hope to compete effectively in the world market.

Because world price floors are heavily influenced by the support level in the United States, the higher U.S. support levels also provide an incentive for competing countries to produce more. In 1983, while we were cutting planted area by 80 million acres, our competitors increased theirs by 6.4 million.

When U.S. supports are above market levels, competitors can establish a price below the U.S. rate and enjoy a price bonus in the prevailing market. Needless to say, our competitors have put their advantage to good use--at the expense of our farmers.

Until the United States and other producers adopt farm programs that allow producers to gear production to the real signals of the marketplace, there is little hope of balancing supply and demand and the farm programs will only exacerbate the problems of competitiveness.

Some suggest that the United States continue its present farm programs and eliminate the competitiveness problem by subsidizing exports. This is not a practical solution, because it could easily escalate farm program costs into a realm we cannot afford. And it vaporizes the idea of real-world economics in the long term.

The current export situation has generated an intensive examination in the Congress, the Executive Branch and in the farming community and the industries that serve it.

There is growing recognition in each of these sectors of the close connection between domestic price support levels and U.S. agriculture's competitive stance in the market.

This will be the principal focus of the debate and deliberations leading to farm legislation to replace the current Agriculture and Food Act of 1981.

When the farm legislation for 1985 is addressed, the key issue will be whether the United States can return to a more market-oriented system that is necessary for long-term health of American agriculture. Simultaneously, we must separate the social ramifications of the legislation from the economic ones.

Government must be very sensitive to the short-term problems that change will bring to many farmers. It has an obligation to provide meaningful, sensible incentives for transition from one type of production or vocation to another, where it may be necessary.

Although the outcome remains to be seen, the sentiment toward a more open market, with farmers insured against risk by some means other than price supports, is strong.

Export Development

Clearly, if the United States is to retain its hold in agricultural exporting, we must pay particularly close attention to these factors.

First, there must be more and lasting buying power from the buyers of U.S. products around the world. For agriculture, the greatest buying potential lies in the developing nations of the Third World. There must be economic vitality in the Third World if we are to have the kind of demand base this country is capable of satisfying.

Long-range, the only way to address the problem of hunger and the only way to provide food security for all people is through economic development in all nations. Food aid has to be considered a temporary approach for dealing with crisis situations, such as those in Africa today, and to assist those countries that have a long way to go to crawl out of the economic abyss.

The long-term U.S. approach must be to aid in the development of healthy, growing economies around the world. It is up to us and the rest of the industrial world to help the underdeveloped countries expand their exports. The more we import from the Third World, the more the developed nations will be able to export to the Third World. The United States and other nations must lift the protectionist barriers that discriminate against Third World nations and prevent them from producing for export. These economies, in turn, will provide markets for U.S. food and fiber.

Second, the United States must itself be price competitive and aggressive in its marketing and promotion of agricultural products. A successful exporter must 1) develop products that appeal to the particular market being focused on; 2) make those products consistently available; and 3) price those products at reasonable and competitive levels.

The role of farm legislation in this area of price competitiveness is obvious and vital. Export markets should not be used as a dumping ground for surplus disposal of products that the domestic market can not absorb.

By producing a product designed to appeal to overseas markets that is both aggressively and continuously promoted and reasonably priced, U.S. agriculture can take advantage of this economic tendency to expand its export markets, particularly in more developed and middle-income nations where there is greater discretionary income.

Third, access to markets must be provided. The reduction and elimination of access barriers at home as well as abroad must be the policy of the United States. This country must not only ask others to remove their barriers as we have and will continue to do, we must also be willing, in a multilateral effort, to tear down barriers we ourselves have erected.

The Commodity Outlook

At this point, I would like to summarize the outlook for major export commodities.

Wheat and wheat flour: U.S. wheat exports, including flour, for fiscal 1985 are forecast at $6.1 billion and 40.4 million tons, down 9 percent in value and 6 percent in volume. The export outlook for wheat and flour is tempered by record wheat production in the European Community and improved production prospects in the Southern Hemisphere, coupled with weak demand.

India, traditionally a wheat importer, may export wheat during fiscal 1985 since the record 1984 crop is straining storage facilities. Because of increased competition such as this, U.S. wheat prices in fiscal 1985 are expected to decline from the 1984 level.

Coarse grains: Exports of coarse grains in fiscal 1985 are forecast at $8.2 billion and 61.6 million tons. The export value of coarse grains will remain unchanged from 1984, while export volume will be up. World production of coarse grains in 1984/85, particularly in the United States, is expected to increase dramatically. These supplies are available for marketing during this fiscal year. These large domestic supplies, softening of U.S prices and the resulting increased foreign demand are responsible for the 11-percent increase in export volume forecast for fiscal 1985.

Corn exports, which comprise about 85 percent of U.S. coarse grain exports, are forecast at $7.0 billion and 52.5 million tons for fiscal 1985. Corn prices are expected to decline 12 percent during the year. The impact of lower prices will hold total export value of corn to 1984 levels. The export volume of grain sorghum is forecast to increase slightly from 6.2 to 6.4 million tons in fiscal 1985.

Rice exports in fiscal 1985 are forecast at $800 million and 2.1 million tons, down from $897 million and 2.3 million tons in fiscal 1984. U.S. rice exports continue to be impeded by weak foreign demand, large world stocks and the continued strength of the U.S. dollar. The rice export market has been relatively static the last two years. Little significant change for rice exports is expected in the near term.

Oilseeds: Sharply higher foreign oilseed output, along with a sizable expansion in U.S. oilseed plantings and indications of improved yields, will likely result in an increase in world oilseed supplies of about 13 million tons in fiscal 1985. Oilseed and product exports are expected to recover by almost 5 percent from the 28 million tons in fiscal 1984; however, value is forecast to dip 6 percent to $8.3 billion because of increased world oilseed supplies and continued soft demand.

Cotton: The export value for cotton is projected to decline about 17 percent to $2.0 billion from the exceptional export year we saw in fiscal 1984. On a volume basis, U.S. cotton exports are expected to fall to 1.3 million tons in fiscal 1985, 15 percent below last fiscal year, but above fiscal 1983. The prospect of lower cotton exports reflects:

--Increased foreign production, particularly in China, whose production almost equals the combined total of the United States and the Soviet Union;

--The emergence of China as a cotton exporter;

--Stagnant import demand in major markets--Japan, the Republic of Korea, Taiwan and Western Europe;

--Larger crops in Pakistan and Mexico, which will provide these countries with available cotton for export.

Tobacco: Relatively stronger demand for the 1984 flue-cured crop and the large supplies of burley tobacco may strengthen unmanufactured tobacco exports somewhat during fiscal 1985 to 230,000 tons, compared with 227,132 tons in fiscal 1984. Stagnant or declining cigarette demand in many traditional U.S. leaf markets will be a continuing factor in the tobacco export market.

The outlook for tobacco imports in fiscal 1985 is somewhat clouded by the current International Trade Commission investigation of leaf imports, but imports are expected to increase marginally from 190,000 tons in 1984. The strong dollar and ample supplies of foreign tobacco priced substantially below U.S. leaf are the primary reasons for the expected increase. Sluggish demand for tobacco products in the United States will temper the import demand.

Fruits and vegetables: Exports of horticultural products, after falling for three consecutive years, are expected to increase slightly from $2.6 billion in fiscal 1984 to $2.7 billion in fiscal 1985. The improvement should come about because of Japan's expanded orange import quota, strong demand for U.S. onions in Japan and the Republic of Korea, favorable prices for citrus juices and a recovery in apple shipments to Taiwan, the largest offshore market for U.S. apples.

Livestock and poultry: Livestock, poultry and dairy exports are forecast to rise about 1 percent to $4.3 billion this year. The bulk of this increase is anticipated in livestock and dairy products. Most of the gains will come in exports of red meats (beef and veal) and furskins. For dairy products, the biggest increase will be for nonfat dry milk exported under the Section 416 donation program.

Agricultural Imports: The value of U.S. imports is forecast to continue its upward movement in 1985, but at a much slower pace. Almost all of the increase will be in horticultural product imports, which may be up more than $500 million due to tight U.S. domestic supplies, especially for fresh fruits and citrus juices.

EFFECTS OF THE MACROECONOMIC ENVIRONMENT ON 1985 FARM LEGISLATION*

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This paper examines how the macroeconomic environment might influence the nature of the 1985 Farm Bill. It is useful, I believe, to consider this topic since perhaps more than in previous years macroeconomic conditions promise to shape the nature of major farm legislation. The main points that I will cover in the paper are as follows:

- Lessons from recent history about the impact of the macroeconomic environment on farm legislation.
- The climate for farm legislation produced by prospective 1985 macroeconomic conditions.
- Directions in which 1985 farm legislation may be pushed by macroeconomic conditions.

Lessons from Recent History

Let's first examine the macroeconomic environment that existed prior to and during the debate on the Agriculture and Food Act of 1981 and macroeconomic developments during 1982-84 that may influence the 1985 Farm Bill. As we do this, we will try to relate macroeconomic conditions to actions regarding farm legislation and learn from history. Statistics on inflation, growth of real Gross National Product (GNP), unemployment, interest rates, federal deficits, and the value of the U.S. dollar; which help us to carry out this exercise appear in Table 1. Note that the statistics appearing in Table 1 represent the average values for seven variables that describe the macroeconomic environment during the years when the 1977 Agricultural Act (1978-81) and the 1981 Agricultural Act (1982-85) operated. The 1985 figures in the table are forecasts which will be referred to in the second section of the paper. In the analysis, policy makers also were assumed to attach more importance to the variables in the year when a four-year farm bill was to be passed than in the three preceding years. To reflect this consideration, the values for the variables are listed separately for 1978-80 and 1981 for the 1977 Agricultural Act and for 1982-84 and 1985 for the 1981 Agricultural Act.

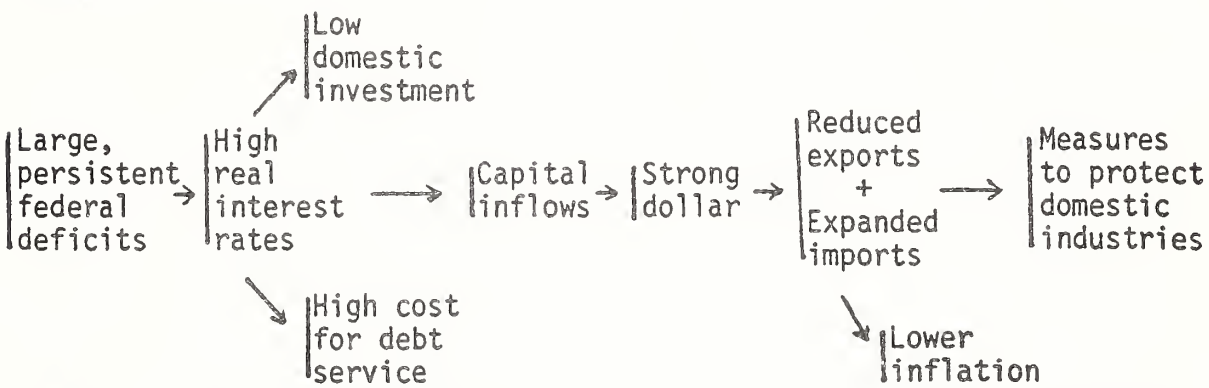
Macroeconomic Conditions During the 1977 Act. Inflation averaged in double-digit figures and real GNP grew at a modest 2.5% rate during both 1978-80 and 1981. The strong inflation was fueled partly by food

* Helpful comments on this paper by Professors Emerson Babb and Paul Farris of the Department of Agricultural Economics at Purdue University are acknowledged.

prices which increased at double digit rates during 1978-80 before registering a slower 4.3% rate of increase in 1981. Energy prices, reflecting a major oil price shock in 1979, rose by an average of 19% per year during 1978-81. The nominal prime interest rate was high during the life of the 1977 Act, especially in 1981 when it averaged 18.9%. Real long-term interest rates, which were at negative average levels during 1978-80, increased to almost 4% during 1981. While the causes of the high nominal and real interest rates of 1981 are not fully understood, they presumably reflect the effects of the Fed's 1979 Quantitative Accord and restrictive monetary policies.

Federal deficits were low by recent standards during 1978-81. Moreover, the lower value of the U.S. dollar during this period helped to spur agricultural and non-agricultural exports. Agricultural and non-agricultural exports rose 47% and 72%, respectively, during 1978-81. U.S. agricultural exports reached a record $43.3 billion level in 1981.

Macroeconomic Conditions During the 1981 Act. Macroeconomic conditions witnessed during the life of the 1981 Agricultural Act include the deepest post WWII recession (measured in terms of unemployment), a Keynesian economic boom and an economy which appeared to be pausing to catch its breath late in 1984. The hallmark of the 1982-84 period, though, has been large persistent federal deficits, averaging $160 billion per year. While the large, persistent deficits can help to produce an economic boom and disinflation, they also contribute to the other developments described in the simplified diagram appearing below:



How much the federal deficits influence the variables in the diagram is not known with much certainty but there is evidence on the impacts:

- Eckstein and Brinner estimated that federal deficits increased real interest rates by 1.5 to 3.0 percentage points in 1983 [7].

- Preliminary results of a study conducted by the Economic Research Service of the USDA suggest that reducing the structural deficits by $100 billion per year would reduce nominal interest rates by 2% to 4% [9].

- The Congressional Budget Office forecasted that net interest outlays of the Federal government will increase from about $111

Table 1. Average Values for Seven Macroeconomic Variables During Years of Operation of the 1977 and 1981 Agricultural Acts[a]

Variable	Value of Variable During Life of 1977 Act		Value of Variable During Life of 1981 Act	
	1978-80	1981	1982-84[b]	1985[c]
1. Inflation Rate, as measured by CPI (%)	10.8	10.4	4.5	4.5-5.2
2. Rate of Change in Real GNP, computed using 1972 dollars (%)	2.5	2.5	2.7	3.0-3.5
3. Civilian Unemployment Rate (%)	6.3	7.6	9.0	6.9-7.2
4. Prime Interest Rate (%)	12.3	18.9	12.6	11.5-13.5
5. "Real" Long-Term Interest Rate, measured as Corporate Aaa Bond Rate minus CPI (%)	- 0.7	3.8	8.4	6.5-8.5
6. Federal Budget Deficits (Billion $)	45.4	57.9	160.4	180.0-195.0
7. Trade-Weighted Value of the U.S. Dollar (March 1973 = 100)	89.3	102.9	126.2[d]	Under Downward Pressure

[a] Source of Figures: [3, 5, 6]. All figures are for calendar years except those for federal deficits, which are expressed on a fiscal year basis.

[b] Figures for the last two-three months of 1984 are not included in the numbers used to calculate 1982-84 averages.

[c] Forecasts.

[d] The 1982-84 average values mask the strength exhibited by the dollar in late 1984. In October 1984, the trade weighted value of the dollar was 148, up by two-thirds from the 1980 figure.

billion in fiscal 1984 to $214 billion in fiscal 1989 (93% increase) if no further actions are taken to increase taxes or cut expenditures [4, p. 62].

- Federal Reserve and other studies show that the appreciating dollar reduced the rate of inflation by about 1.5 percentage points each year during 1981-83 [8]. This effect emerges partly because the Federal Reserve has not monetized the deficits.

Obviously the deficits are not the entire cause of the developments noted in the diagram. In particular, the dollar is strong partly because of the well known "safe haven" phenomenon and because real risk adjusted rates of return on U.S. securities have increased in comparison to yields on foreign securities. However, the federal deficits are one symptom of unbalanced macroeconomic policies which place heavy burdens on interest sensitive, export dependent sectors such as agriculture and on import-competing sectors. The policies are unbalanced in the sense that monetary policy is often restrictive and fiscal policy is expansive, producing large deficits.

The 1978-81 period (years when the 1977 Agricultural Act operated) might be characterized as one of stagflation, external shocks and relatively strong export markets. The 1982-84 period (part of the life of the 1981 Agricultural Act), on the other hand, might be described as a time of high real interest rates, a strong dollar, weak exports, lower inflation and other phenomena associated with large, persistent federal deficits.

How can we relate the 1981 Agricultural Act to the macroeconomic environment existing prior to the enactment of that legislation? Not surprisingly, the 1981 Act appears to have been shaped by conditions that existed during 1978-81 as well as by anticipated problems, particularly the federal deficits.

Certain provisions of the 1981 Act apparently were designed to keep farm exports growing strongly and to fight the inflation and productivity problems of the late 1970s and early 1980s. For example, the 1981 Act eliminated the restrictive acreage allotments and marketing quotas on rice. This action could be expected to help fight inflation, increase efficiency and expand exports. The change to a greater "market orientation" for rice admittedly did not produce all the hoped for effects partly because the support prices for the commodity remained substantially above market clearing levels under the 1981 Act. The relatively large amount of discretion given the Secretary of Agriculture under the 1981 Act regarding the setting of loan rates for corn and wheat, together with the prodding that he could expect from the Office of Management and Budget to keep increases in loan rates small, also could be used to combat inflation and expand exports. While the unhooking of dairy price supports from parity under the 1981 Act was motivated largely by desires to cut budget outlays for the dairy program, this action also could slow the rate of increase in prices paid by consumers for dairy products.

Early Lessons Regarding the Deficits. While in 1981 some in the Congress and Administration believed that tax cuts associated with the Economic Recovery Tax Act of 1981 and other supply side measures would help the economy grow out of the deficits, many correctly predicted that large persistent deficits were in store for the economy. This concern plus desires to limit the government's role in the economy contributed to efforts to (a) limit overall spending on the 1981 Farm Bill to approximately $11 billion for the life of the legislation, and (b) transfer part of the cost of certain farm programs during 1982-84 from the Treasury to consumers or to producers themselves.

Overall Spending Limits. Budget outlays for fiscal 1982-85 for the Agricultural Act passed in December 1981 were projected by the USDA in the fall of 1981 to total about $11 billion, which is about $400 million more than would have been produced by the "austere" Senate farm bill. A Presidential veto of the conference bill would have been a real possibility if projected costs had exceeded $11 billion by even relatively small amounts. As it turned out, net CCC outlays for the 1981 Act for fiscal 1982 alone totalled over $11 billion and in fiscal 1983 reached $18.9 billion, not counting the value of $9.4 billion Payment-In-Kind commodities committed in 1983. Moreover, farm program costs grew faster in fiscal 1982 and 1983 than any other budget category [1].

Efforts to Transfer the Costs of Certain Farm Programs to Consumers and Producers. How part of the cost of certain farm programs was shifted to consumers and/or producers during 1982-84 can be illustrated using examples for sugar, tobacco, and dairy products.

A sugar price support program was included in the 1981 Act with the expectation that domestic sugar prices would be supported mainly through supply control measures. Thus, initially sugar prices were supported under the 1981 Act through use of import fees and duties and later in May 1982 through the use of import quotas. Such measures are effective for this purpose because the U.S. is a net importer of sugar. Also, in administering the program the USDA has employed market stabilization prices which reduce incentives for forfeiture of sugar to the CCC such as occurred in 1977-78. Because it relies on supply control for supporting prices, the sugar program has been characterized as one that transfers costs from the federal budget to the checkout counter at the supermarket.

Tobacco prices have been supported for decades in the U.S. through use of quotas which restrict supplies. The new wrinkle is the no-net-cost-to-the-government provision mandated by the 1981 Agricultural Act and passed into law in 1982. The price support program for tobacco is administered by producer cooperatives acting under loan agreements with the CCC. The CCC extends loans to the cooperatives to enable them to pay producers the support prices and store the tobacco until it is sold. Tobacco received by the cooperatives serves as collateral for the CCC loans. Beginning in 1982, if returns from sales of the tobacco which served as collateral are not sufficient to repay the loans, the difference must be paid by growers from contributions previously made to a fund. Prior to 1982, such shortfalls were made up by the CCC.

The change to the no-net-cost-to-the-government program transferred some program costs to producers.

Under the 1981 Agricultural Act, dairy price supports were unhooked from a direct tie to parity and price support triggers were installed to relate minimum dairy price support levels to the size of CCC dairy product purchases partly to reduce burgeoning dairy program costs. Subsequently, in the 1982 Budget Reconciliation Act, dairy price support levels were frozen and producers were assessed to pay for a portion of the cost of dairy price supports, marking the beginning of the move to producer self-help. Dairy legislation enacted in 1983 (a) authorized a 15-month paid milk diversion program under which producers could qualify for $10 per hundredweight payments for reducing milk sales below specified base levels, (b) required that all milk producers pay 50¢ per hundredweight to defray a portion of the costs of the milk diversion program, and (c) authorized a 15 cent per hundredweight assessment on milk marketed by producers to finance a dairy product research and promotion program to expand the demand for dairy products. Thus, the dairy example represents a rather pronounced movement to supply control and producer self-help during 1982-84.

Lessons from Efforts to Contain Farm Program Budget Outlays. The implementation of supply control measures and/or producer self-help for dairy, tobacco, and sugar doubtless kept budget outlays lower than they would have been in the absence of such measures. But, as noted above, despite efforts to hold down budget outlays during the life of the 1981 Agricultural Act, they ballooned for reasons that are well-known to this group. Partly it was good growing conditions in the U.S. and the worldwide recession that caused the large increase in farm program outlays. In addition, the problem was exacerbated by the increase in farm productive capacity that occurred in the U.S. and elsewhere in the 1970s as a result of strong demand and high agricultural prices. But a major cause was the strong dollar which owes part of its strength to the large, persistent federal deficits associated with U.S. macroeconomic policies. The lesson is that the 1981 Act (or similarly structured legislation) is inherently costly legislation when crop exports fall substantially from the levels that prevailed in the late 1970s and early 1980s. An assumption implicit in the 1973, 1977, and 1981 Agricultural Acts -- i.e., that price supports and target prices would not come into play for prolonged periods -- was proven untenable by events of 1982-84. Secondly, interest groups have acquired incentives to lobby for restructuring of farm programs to offset effects of the macroeconomic policies that have prevailed during the life of the 1981 Act. Finally, the sugar, tobacco, and dairy programs, with their emphasis on supply control and/or producer self help, may be interesting models for those wishing to reduce federal budget outlays for a few other farm programs.

The Climate for Farm Legislation Created by 1985 Macroeconomic Conditions

My forecasts of certain elements of the macroeconomic environment for 1985 appear in Table 1. If we assume that policy makers

collectively act like Mr. McGoo (the nearsighted cartoon character), then these may be the most important figures considered in the paper.

In general, the forecasts describe an economy whose rate of growth in 1985 will have slowed substantially from levels recorded in early 1984. Since WWII, periods of economic expansion in the U.S. have endured an average of 36 months. Thus, given the age of the current expansion we would be on course for some type of economic correction in 1985. I put real growth of GNP in the 3% to 3.5% range for 1985. Reagan Administration officials apparently have established a 4% real GNP growth rate as the basis for their budget proposals for next year. Such a growth rate is possible but so are lower figures in the 2.0% to 2.5% range.

The consensus forecast of the economists contributing to Blue Chip Economic Indicators is for federal deficits of $167-$177 billion per year for 1985 through the remainder of the decade. These forecasts, which reflect anticipated tax increases and budget cuts, appear to be plausible but are perhaps a bit low for 1985, since deficit-reducing measures might not be enacted in time to bring the deficits down to the $167-$177 billion range during the current fiscal year. Thus, my macroeconomic forecast for 1985 includes continued large federal deficits ($180 to $195 billion) and high real interest rates in the 6.5% to 8.5% range. Other things equal, these developments would tend to keep agricultural exports from growing strongly and aggravate the financial stress in the farm community.

But other things are seldom equal. Indeed, one major uncertainty in the 1985 forecast relates to the strength of the dollar. The trade weighted value of the dollar in October 1984 was up about two-thirds from 1980 levels. I count myself among the economists who believe that this level of strength for the dollar is unsustainable. I don't pretend to know exactly when the dollar will fall or what will be a sustainable equilibrium value for it. However, exchange markets probably cannot ignore the U.S. current account deficits forever, and modest declines in U.S. interest rates might start the correction process. Also, given the amount of speculation in the dollar, the correction process could be disorderly since nobody would wish to be the last man out in the event of a major exodus from the dollar.

A decline in the value of the dollar could give the economy a dose of inflation. Just how large this dose would be is uncertain but the disinflationary process described in the discussion of the relationship between federal deficits and the appreciating dollar does work in reverse. The initial inflationary impact of a decline in the value of the dollar can be computed as the product of the percentage devaluation of the dollar times the fraction of consumer goods that are imported. But this measure ignores certain indirect, secondary effects which may take long periods of time to work themselves out. The Congressional Budget Office cites a rule of thumb showing that a 10% reduction in the value of the dollar would increase the overall price level by about 1% within two years [4, p. 6]. Kenen estimated that the 17% decline in the value of the dollar from 1971:1 to 1973:2 raised U.S. prices about 2.4 percentage points [10]. Blinder argued that the likely effect of

the 1971-73 devaluation was to increase price levels by 3 to 4 percentage points after all the lags and secondary effects are taken into account [2]. I cite these figures only to suggest that a fall of the dollar could produce a substantial inflationary impact.

Any substantial decline in the value of the dollar should, after some delay, increase U.S. exports of agricultural and non-agricultural products. How much exports would increase presumably depends upon how much market forces would push up interest rates to balance the supply and demand for funds, how much and how soon the Federal Reserve would tighten the money supply to contain inflation in the face of the declining dollar, how much tighter money would push up interest rates, and how much of the decline in the dollar's value would be restored by higher interest rates. Obviously this scenario involves secondary effects which are difficult to forecast. It also underscores the importance of timely, systematic action to reduce the federal deficits and enhance the chances for an orderly decline in the dollar's value.

Much of the action in macroeconomic policy in 1985, of necessity, will be monetary policy action. It could hardly be otherwise since the fiscal policy throttle has been jammed near wide open and appears likely to be stuck near its present position at least through 1985. I also forecast that there will be little or no monetization of the federal deficits in 1985.

What does the 1985 macroeconomic environment mean for the debate on the 1985 Farm Bill? I see no strong possibility for relief from the financial stress that has beset parts of the U.S. farm economy recently. Agricultural exports could be helped by a decline in the value of the dollar in 1985 or 1986 or by tight supplies elsewhere in the world. However, I fail to see any developments unfolding in 1985 that would cause a large decline in real interest rates. Hence, the debate on next year's farm bill is likely to occur against the backdrop of financial distress in parts of the farm economy.

Directions in Which 1985 Farm Legislation May be Pushed by Macroeconomic Conditions

There appear to be two basic directions in which farm legislation could go in 1985. If the Congress and Administration reach an agreement in the first several months of 1985 on tax and revenue measures which would cut prospective federal deficits below, say, $100 billion per year, then a move toward a market oriented 1985 farm program (derailed by events of 1982-84) might occur. Such a program would include provisions to remove impediments to farm exports and lessen the role of government in the agricultural sector. A greater market orientation might be feasible under this scenario since some price and income problems in the agricultural sector eventually would take care of themselves in an environment of lower deficits, lower real interest rates and larger exports. However, adjustment assistance for the agricultural sector probably will be a needed part of this package since the financial condition of farmers would not improve instantly and farm export markets lost in recent years will not be regained quickly.

I doubt whether such a scenario can materialize in 1985. Hence, I expect farm legislation to be crafted to offset part of the effects of macroeconomic developments and deal with symptoms of problems created by the deficits. In broad outline, the proposals which could emerge from such an environment include the following:

1. Proposals for additional credit subsidies and loan deferrals to help financially-strapped farmers and agricultural bankers appear likely to be made.

2. Additional export subsidies may be proposed to help offset the effects of the strong dollar. While this approach has advantages relative to supply control, it could create problems for the U.S. vis-a-vis its trading partners.

3. Higher target prices and loan rates accompanied by traditional supply control measures -- e.g., set-asides and paid land diversions -- might be proposed. However, the evidence suggesting that we have lost foreign market share for crops including wheat, rice, cotton, and tobacco as a result of using such measures in the past may discourage use of this option. Also, arguments suggesting that the price elasticity of demand for certain export crops is elastic may discourage further supply restriction and price enhancement efforts [11].

4. Programs similar to those for sugar, tobacco, and dairy products which shift program costs from the Treasury to the checkout counter at the supermarket or to producers themselves may be considered for additional commodities. Pressures will probably exist to keep supply control measures on commodities where they presently operate -- e.g., on peanuts.

5. Incentives may develop to put some sort of "cap" on farm program outlays to prevent a repeat of the fiscal 1982-83 expenditures. But, "caps" are not simple to implement for farm programs which have many of the characteristics of entitlement programs. Perhaps a "cap" would be implemented by giving the Secretary of Agriculture flexibility to adjust target prices, loan rates, and other commodity support prices to levels needed to limit expenditures to the amount specified in the "cap".

Summary Note

A "catch-22" of sorts is described in the final section. Budget constraints appear likely to keep federal transfers of funds at levels which will do little to produce real prosperity for much of the agricultural sector. Moreover, if sums equal to those spent on U.S. farm programs in fiscal 1982-83 should be made available for 1986 and later years, this action would increase federal deficits and exacerbate the problems facing the sector. Indeed, such largess might be a symptom of uncontrollable deficits. This dilemma points up the difficulty of providing lasting prosperity for the agricultural sector without reducing

real interest rates and expanding exports. The best hope for achieving such changes comes from the painful process of cutting the federal deficits and returning to more balanced macroeconomic policies.

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TRADE AND CAPITAL MARKET LINKAGES AS COMPONENTS OF THE DOMESTIC FARM POLICY ENVIRONMENT

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I have purposely broadened my topic to include the interiational capital market. I did that because I didn't see any place else on the program where it might be discussed and because I think this market is one of the major elements likely to influence our trade performance in the years ahead.

My remarks are divided into three unequal parts. First I will review the nature of our trade and international capital market linkages as elements of the environment for domestic farm policy. Then I will discuss some significant trade and capital market developments in the international economy. And finally, I will discuss the need to reform and strengthen our international institutions. At the end I will have some concluding comments.

Since the previous session this afternoon discussed the trade outlook, I will do very little of that sort of thing. However, I will be talking about things that will have a significant effect on our trade performance in the years ahead, and which thus will influence the environment for domestic farm policy.

Background

The decades of the 1960's and the 1970's witnessed a veritable transformation in the structure of the international economy and in how the United States relates to it. Four elements of that transformation were of major significance to U.S. agriculture: (1) the increased dependence of both agriculture and of our economy as a whole on international trade; (2) the emergence of a well-integrated international capital market; (3) the shift from a fixed exchange rate regime to a flexible exchange rate regime in 1973; and (4) the emergence of a great deal of monetary instability.

Let me briefly discuss the first two of these, since they are the subject of my paper. First, the growth in our dependence on trade. Those of us closely associated with agriculture know that its dependence on trade increased greatly during the 1970's. In fact, its dependence on trade doubled from 1970 to 1979. Less seldom do we realize that the dependence of the economy as a whole grew by approximately the same amoung in the same period. And even less seldom do we realize the significance of this growing dependence on trade.

By the beginning of the 1980's approximately 25 percent of this nation's GNP was attributed to international trade. That puts us in the same class with Western Europe as a whole, and with Japan.

Agriculture, of course, is even more dependent on trade than is the rest of the economy. By the early 1980's some 40 percent of our farmland was devoted to exports and approximately 30 percent of cash marketing was due to exports. For individual commodities, the proportions were even higher. We were exporting some 65 percent of the wheat we produced, 55 percent of the soybeans, and some 30 percent of our corn - and those are major crops. At the same time we were also exporting large shares of our production of rice, cotton, and peanuts.

What is less seldom recognized is that this nation is also a major importer of agricultural products - in most years being second only to West Germany. Most of these imports are of tropical products that are not directly competitive with domestic production. But our imports of competitive products would be significantly larger if it weren't for protection provided the cattle sector, the dairy sector, fresh fruits and vegetables, and so on.

The significance of this nation's growing dependence on trade is that it gives us a more open economy - more open to forces from the international economy. That means that our domestic economy is increasingly beyond the reach of domestic policy. And agriculture has probably illustrated this point about as well in recent years as any sector in the economy. Despite enormously costly commodity programs, agriculture is doing poorly, and largely because international factors are literally swamping the effects of the domestic programs.

Turning now to the emergence of the international capital market, this has to be one of the most significant developments in years as a factor affecting our economy and its performance. When combined with the shift to flexible exchange rates, the emergence of the international capital market changed the way that monetary and fiscal policy affects the economy, established an important linkage between capital markets and commodity markets, and has been the source of significant shocks affecting the agricultural sector.

By the beginning of the 1980's, the value of credit outstanding in the international capital market was approximately commensurate with the amount of international trade - $1.7 trillion. Almost all countries use this capital market and it thus ties the economies of the world together in ways that are every bit as important as is trade. More importantly, it ties our respective macroeconomic policies together.

Perhaps the most important issue to discuss here is the way the existence of this capital market alters the way that monetary and fiscal policy affect the economy. Back at the cime we were on a fixed exchange rate regime and international capital markets were atrophied, the effect of changes in monetary and fiscal policy were rather

broadly spread in the economy. Since the emergence of the new capital market and the shift to flexible exchange rates, changes in monetary and fiscal policy are largely reflected in adjustments in the trade sectors, such as agriculture. This has given agriculture an instability it had not previously had.

The new way monetary and fiscal policy affects the economy can be traced through rather easily. For example, suppose the Federal Reserve wants to slow down the expansion of the economy. It will do that by slowing down the growth rates in the monetary aggregates, which will lead to higher interest rates, other things being equal. The high interest rates induce an inflow of capital, and this bids up the value of the dollar. A stronger dollar chokes off exports, and at the same time causes imports to come in at a lower price, thereby choking off the sectors that compete with imports as well. The Federal Reserve accomplishes its objective, but it has done so by forcing adjustments in the export sectors and in the sectors that compete with imports. Hence, agriculture has become one of the means by which monetary and fiscal policy impact the economy. (The reverse of these adjustments occurs when the Federal Reserve attempts to stimulate the economy.)

What has complicated things for agriculture is that capital markets and monetary policy have become a great deal more unstable at precisely the same time that agriculture has become more vulnerable to changes in monetary conditions. That has given us a great deal more instability in agriculture, and changed significantly the economics of the situation. Although we're still prone to interpret every little wiggle in agriculture as a response to changes in the weather, what has really been kicking the sector around these past 15 years is unstable monetary conditions. These changes in monetary conditions affect our trade performance, and thus it appears on the surface that international trade is inherently unstable. It isn't the trade itself that creates unstable conditions in agriculture, however, it is unstable monetary conditions that create it. We need to understand this root cause if we are to bring about desirable changes in policy.

Trade and Capital Market Developments in the International Economy

There are some very significant developments taking place in the international economy. Although some of these are rather far removed from agriculture itself, they are of great significance to that sector. Let's take a look at some of these developments.

1. The international debt crisis is significantly altering policies in the developing countries.

Most analysts who attempt to understand the consequences of the international debt crisis focus on the lack of purchasing power that the debt burden creates for the developing countries. Important as that is, it is probably outweighed by the potential consequences of

the changes in domestic policies the debt problem is inducing. The point is that many developing countries have had to get their economic house in order if they are to have any hope of servicing their debt. That means in many cases that they have had to turn outward with their trade and exchange rate policies and thus to stop discriminating against their agricultural sectors.

Brazil is a perfect case in point. That country has devalued its currency six-fold over the last two years while at the same time the domestic price level has risen four-fold. That amounts to an enormous devaluation in the real value of the currency.

One consequence of that realignment, if it is permitted to stick, is that Brazil will very likely take the United States out of the international soybean market. In fact, if the realignment sticks, we may in a few short years be seeking tariff or other protection to keep Brazilian soybeans from coming into the United States.

As a condition for receiving funds from the IMF and the World Bank, Brazil has also been forced to phase out its subsidies to the domestic wheat sector. These subsidies on the consumption side had been enormous. When combined with the realignment in the value of the currency, this change in policy will significantly diminish, if not eliminate, the Brazilian demand for U.S. wheat.

Similar changes in policy have been taking place in Mexico, Argentina, and other countries. These changes have the effect of either significantly reducing their demand for our exports, or of improving their competitive position in the international economy relative to ours. The consequences of these developments can be very great for U.S. agriculture.

2. <u>The developing countries are facing a serious "reparations" problem in trying to repay their debts</u>.

I have used the word reparations here because the problem is very similar to what Germany faced at the end of World War I when it tried to pay its war reparations. The point is that these debtor countries will have to increase their exports to the United States and other industrialized countries if they are to service their debt and eventually pay it off. The issue is whether they will be willing to absorb those expanding exports.

So far the United States has served as a remarkable market for these countries as it has moved through the expansion phase of the cycle with a very strong dollar. This has been especially beneficial to the Latin American debtor countries.

But there is growing evidence that the U.S. economy may be slipping into a recession. If we do drop into a recession, that will reduce the demand for exports from those countries. Moreover, if significant unemployment develops again, it will be very difficult to

resist protectionist pressures against imports from these countries. This problem will be further exacerbated if the value of the dollar should decline, as I expect it to do, since that will make their goods more expensive here.

The United States and other industrialized countries have to find a way to take a growing stream of exports from the debtor countries. Without that, these countries will be forced to renounce their debt - with all that that implies for our financial system. And after all, the U.S. gave the world an object lesson in renouncing its foreign debt at an earlier stage in our development.

3. A collection of newly industrialized countries is holding out optimism for the future of developing countries while at the same time posing a major trade threat to the industrialized countries.

This is truly a remarkable development on the international scene. In a relatively short period of time some six less-developed countries - Singapore, South Korea, Taiwan, Hong Kong, Mexico, and Brazil - have literally transformed their economies and pulled themselves up by their bootstraps and out of massive poverty. They have done that by turning outward with economic policy and thus becoming major competitors in the international market for manufactured countries. Exports of manufactured products from these countries increased from $2.7 billion in 1965 to approximately $65 billion in 1980. Moreover, roughly 40 percent of U.S. imports of manufactured products now come from these countries.

There are two important implications of this development. First, it shows that with proper policies the developing countries can experience rapid economic growth and increases in per capita income, thus becoming important potential markets for our agricultural products in the future. Second, to realize that potential we will need to keep our doors open to their exports of manufactured products. The issue of trade being a two-way street will be ever more significant to us.

4. The communications and information-computer industries are transforming the international economy.

These industries are undergoing veritable technological revolutions, and in the process transforming not only our economy but the international economy and how we relate to it as well. For example, the really unique thing about the new international capital market is the rapidity with which transactions can be made world-wide. That is a direct consequence of these revolutions in the communications and information industries.

But these developments have other trade implications as well. For example, just about every country in the world tries to put up trade barriers to the entrance of these industries so they can develop their own "infant" industries. However, just about the time the bureaucrats get a new system of protection devised, a new innovation

is available which completely subverts the system. In fact, the technological changes are coming so fast that the regulators can't keep up with them. As a consequence, these industries are becoming remarkable forces for trade liberalization. The significance of this lies in the fact that it isn't just services that are at issue; together with the services go manufactured products.

5. The emergence of a new protectionism.

Much has been made in recent years about the growing use of non-tariff barriers, export subsidies, variable levies, and state and parastatal trading agencies as new barriers to trade. But parallel to the growing use of these forms of protection has emerged a new protectionism that is qualitatively different from what we have had in the past. This new protectionism is in some sense more difficult to deal with because it is more subtle.

This new protectionism takes at least three forms: (1) selective protection - usually against a single country (Japan) or a group of countries (the NIC's); (2) agreements which create cartel-like arrangements designed to carve up and share markets, such as voluntary export agreements and arrangements like the textile agreement, the steel agreement, the footwear agreement, and so on; and (3) the growing use of domestic subsidies to gain a trade advantage.

These new forms of protection are subtle, but no less costly for that. Our voluntary export agreements to limit imports of Japanese automobiles have cost U.S. consumers enormous amounts. In fact, they have been so lucrative to the Japanese that they will probably keep them if and when we should phase them out. Even more importantly, trade restrictions such as these, like other protectionist measures, act to keep the dollar strong, and that is not to the advantage of agriculture as an export sector.

Another disadvantage of these selective forms of protection is that they break down the principle of equal treatment. This principle has been an important vehicle for trade liberalization in the post-World War II period, since in general any reduction in trade barriers with one country has been extended to all other nations. On the other hand, these new forms of treatment have tended to be self-limiting. In that sense they may have been responsible for keeping us from sliding collectively into a more protectionist state of affairs.

6. A new set of challenges is being posed by our emerging status as a net debtor country.

That's right; you heard correctly. By June of 1985, if U.S. fiscal and monetary policies and the economy as a whole stay on their present trajectories, this nation will become a net debtor country - just like Brazil, Mexico, Argentina, and Chile. If we continue on the same trajectory, by the end of 1985 we will have become the world's largest debtor country - larger than Mexico and Brazil.

As these important way stations in our development experience occur, the chances are quite good that the value of the dollar will decline. We, like Brazil and Mexico, will have to have ever larger exports in order to service our debt, and the mechanism by which that will be brought about will be a decline in the value of our currency. But as the value of the dollar starts to fall, we can expect the inflow of capital to either decline significantly, or to reverse itself - unless interest rates are pressed steadily upward.

Although a fall in the value of the dollar would be good for agriculture and other trade sectors, it would not be good for the economy as a whole. Neither would the high interest rates, whether they are imposed by the Federal Reserve or whether they emerge as a logical consequence of the cut-off of a net inflow of $130 billion in capital per year, be good for agriculture or the economy as a whole. The potential for economic wreckage similar to what we had in the 1930's under these circumstances is quite real. This is a logical consequence of the contradictory monetary and fiscal policies this country has been pursuing these past five years.

The U.S. has one policy alternative other countries don't have in trying to get out of this economic box. Because the world is on a dollar standard we have the option of inflating our way out of the problem by turning on the monetary printing pressure. In that way we would pay our creditors back with cheaper dollars, thus imposing an inflation tax on creditors both at home and abroad. That is not costless either, of course, for it would involve an enormous redistribution of income here at home and a loss of respectability and credibility abroad.

There is probably no issue more important to the future health of agriculture or of the economy as a whole than the manner and speed with which we resolve this problem. Nothing would give us a healthier situation than to move rapidly towards a balanced budget. Nothing would make for a more rapid recovery of agriculture.

The Need to Reform and Strengthen our International Institutions

In devising economic policy for the future one of the most important things we need to learn is that what we can do with domestic policy can have only a modest impact on agriculture or any other sector. The point is that we are now an integral part of an international economy. The last three years ought to provide all the evidence we need that pouring money into domestic commodity programs can have only a modest impact on the welfare of the sector. International developments simply swamp whatever effect domestic programs have.

Our problem on the international scene, however, is that our economic integration has far outpaced our political integration.

Consequently, although economically we are in each others' hair all the time, politically we have very few means whereby we can influence the course of events. We desperately need to begin the process of reforming and strengthening our international institutions so a more sensible international economy can evolve. Unfortunately, as a nation we have become greatly disillusioned with international institutions at precisely the time in which they have become increasingly important to us. We cannot long stay with this disillusionment. We need to get on with the world as it is, not as we would like it to be.

High on our agenda for reform should be our international monetary arrangements. We should seek to phase the U.S. out as central banker for the world and strengthen the IMF in the role originally conceived for it.

Next highest on our list should be a general reform and broadening of the GATT. That inevitably will require multilateral trade negotiations. Moreover, the agenda is long and we need to get on with that, too.

Concluding Comments

U.S. agriculture is emerging into a very competitive international economy. Comparative advantage among nations can be expected to change rapidly on the international scene in the years ahead and the U.S. will need to remain very flexible so as to adjust quickly to changing circumstances. That means that we will have to have flexible commodity programs - programs that will enable us to adjust our agriculture to changing conditions in the international economy. Without that flexibility we will continue to have costly farm programs, stop-and-go agriculture, and an agriculture that is chronically at odds with itself. That is not a very good environment for a profitable agriculture.

DOMESTIC FARM POLICY ENVIRONMENT: THE RESOURCE BASE

OUTLOOK '85

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U.S. Agriculture has been endowed with productive and abundant soil and water resources. American farmers have combined these resources, with modern technology, purchased inputs, and their labor and management to form the world's most productive agricultural system. Not only has U.S. agriculture been able to satisfy domestic and foreign demands for food and fiber at moderate prices, but the sector is beset by surplus production as well.

Under these circumstances, should we be concerned with our soil and water resources or with the adequacy of our capacity to produce? The concern is not over current shortages, but rather, the need to sustain our productive capacity in the future. Future productivity will depend on (1) the wise use of our soil and water resources over time, (2) the extent to which purchased inputs can be economically substituted for natural resources, and (3) the rate of developments of new technologies. Greater reliance on the two latter alternatives is more risky because purchased input prices may witness relative price increases over time and future technological progress involves uncertainty. Additionally, greater use of water and soil resources now and more reliance on purchased inputs and technology in the future may involve adverse environmental implications from the increased residual load.

It is also important to recognize that under most reasonable scenarios the use of soil and water resources will change gradually over time. This statement is not to deny that their may be "blips" in the levels of soil and water use, such as occurred under the PIK Program in 1983. But with anticipated conservation programs, commodity demands, and capital investments, drastic adjustments in resource use are not expected even if soil and water programs are altered. Likewise, the productivity and environmental impacts of soil loss and water use are gradual even though partially cumulative over time. Professor T.W. Schultz has noted that society is far more concerned with short run supply shocks when the long run adjustments in supply may be far more important. Likewise, the critical land and water issues are a more important in a long run context.

POLICY SETTING

During the rapid export expansion of the 1970's, the public became increasingly aware that the Nation's soil and water were not in unlimited supply and that the natural environment had limited ability

to absorb residuals. Recent research findings have indicated that the impacts of soil erosion are a less serious threat to future productivity than initially thought. Yet, soil erosion remains a very real threat to a concentrated portion of our cropland. Also, the fish, wildlife, and health impacts of soil loss, groundwater mining, water contamination, and chemical use are receiving new attention.

At the same time the public is questioning the size of Federal expenditures to aid agriculture in an era of mounting deficits. The public concern is heightened by dissatisfaction with the accomplishments of past and present conservation and farm commodity policies, given the soil, water, and financial problems of farmers. Further, the inconsistencies between farm commodity, credit, insurance, water development, tax, and conservation policies are being questioned.

In this policy setting, Congress will be developing legislation during 1985 to succeed the Food and Agricultural Act of 1981. The 1981 Farm Bill included a "conservation title" that was not affectively integrated into the legislation and much of the title was not implemented. A strong preference for inclusion of an integrated conservation title in the 1985 Farm Bill has been expressed by various interest groups. The preliminary 1985 Farm Bill discussions appear to involve a wide representation of organizations and institutions, including farm and commodity organizations, research and education institutions, Government agencies, conservation and environmental interest groups, and agribusiness representatives.

Given this background, I would now like to set the stage for the balance of my remarks. The next section will consider consistency between soil and water programs and other Government programs. This will be followed by a discussion of current programs to ensure the long run productivity of the Nation's soil and water. The final section will briefly discuss the implications of some proposed modifications of current policies to maintain agriculture's natural resources.

CONSISTENCY

Farm commodity programs are pursued to stabilize commodity prices and assure adequate farm incomes. National conservation programs are directed toward reducing excessive soil erosion and water use to maintain future agricultural productivity, as well as to improve water quality. Although we can pursue both policy objectives simultaneously, care must be exercised in program design to prevent conservation and other farm programs from working at cross-purposes. While conservation programs are attempting to conserve soil and water, Federal commodity, crop insurance, water development, tax, and credit programs, encourage profligate resource use through higher commodity prices, reduced risk, cheaper credit, and lower cost water. Under these circumstances, it is impossible for the market to send accurate signals with respect to resource scarcity and the need to conserve the resource base. Further, farmers in making their

decisions also receive confused signals regarding the best combination of purchased inputs, water, soil, and technology. Wihtin the current system, we may be substituting too much water and land for technology and capital. For example, subsidized water may encourage overuse of water and underuse of water-saving irrigation equipment. Likewise, supported commodity prices may make profitable the development of highly-erosive and fragile lands that are typically in grasses.

A recent ERS study was conducted to identify commodity program components that discouraged conservation and to determine the distribution of critical erosion problems between commodity program participants and nonparticipants. In the sample areas, little difference was discovered in farmers' program participation patterns regardless of cropland erosivity. Less than half of the study area farmers participated in commodity programs. Thus, it appears that achieving consistency through cross compliance offers limited opportunities. Yet, these results only tell part of the story. Commodity programs which increase market prices above the free market equiblibrium, provide incentives to increase production of program crops. Generally, these program crops (food grains, feed grains, and cotton) are the more erosive ones.

CONSERVATION PROGRAM EFFECTIVENESS

Current conservation programs grew out of the depression Era in the 1930's. Given the need for relief and recovery during this period, resource programs were designed to reach as many farmers as possible, reduce soil depleting (surplus) crop production, and maintain farm incomes. These programs have come under much recent criticism. Typical concerns about these soil and water conservation programs include:

- o Conservation practices not being applied to the most severe problem areas;
- o Current resource programs are not cost-effective;
- o Some problems, e.g., salinity, pesticide resistance, groundwater contamination, are receiving inadequate attention;
- o Environmental impacts of soil and water use are being ignored.

SCS and ASCS have major efforts underway to respond to the first two concerns through the modification of current programs. This redirection includes targeting of technical and financial resources to problem areas, reallocating conservation funds to states, and focusing on priority problems. Such program changes have increased the cost-effectiveness of soil and water conservation activities but additional gains are possible.

Likewise, efforts are underway to identify the magnitude and impacts of the other problem areas within the limitations of existing budgets. Given the regional nature of some problems, they may call for State and Federal-State partnerships in devising appropriate solutions. By attacking these problems at the appropriate governmental level, the public can better assess the benefits and costs of government intervention. Two other developments are beginning to influence the direction of current conservation programs. First, we are breaking new ground in the information area. Inventorying and modeling efforts have been developed to the point that the critical erosion areas can be

identified and the productivity losses and decreased net returns associated with soil erosion and water mining can be measured. These tools will aid in future program planning to achieve greater effectiveness and efficiency. Second, a better understanding of the role of markets and market signals in soil and water use decisions can be a helpful guide in future program decisions. If serious distortions are removed, market prices for soil and water resources can be used as signals of resource scarcity, indicators of profitable input substitution opportunities, and inducements for technological change. From such information the need for and role of conservation programs in allocating soil and water resources over time can be ascertained.

DIRECTIONS OF RESOURCE POLICY

A number of new resource conservation policy options have been advanced by various interests groups. The purpose of this section is to highlight a few prevalent proposals and to summarize their consequences. Some of the policy options are designed to deal specifically with improving conservation policies. Others are meant to simultaneously achieve conservation and farm commodity program objectives while avoiding program conflicts and reducing public expenditures.

First, continuation of current conservation programs coupled with more targeting of conservation spending, offers potential for more cost-effective investments. SCS and ASCS targeting of cost-sharing funds and conservation technical assistance have increased program efficiency with soil and water conservation significantly higher in targeted than nontargeted areas. Additionally, the costeffectiveness of conservation practices has been improved. Further improvements are possible if the criteria for selecting targeted areas are narrowed, thus avoiding the dissipation of program impacts. Given recent developments in measuring the productivity losses associated with soil erosion, a productivity-based targeting scheme for the Nation's cropland with the most serious threat of productivity loss would be a further improvement. But these changes ignore the historical foundation of the cost-sharing and technical assistance progrms and do nothing to insure consistency with other USDA programs.

Second, to reduce the inconsistencies between conservation and other USDA programs, cross-compliance initiatives, such as "sodbuster" provisions, have been proposed. Although such proposals have the desirable characteristic of achieving greater consistency, they may prevent programs from achieving their primary objectives. If farmers on erosive croplands wish to participate in commodity programs, they will incur more substantial conservation costs which may cause the costs of participating to exceed the potential benefits. Also, if a significant share of farmers do not participate in commodity programs, the cross-compliance approach may be ineffective. The benefits of supported commodity prices also accrue to nonparticipants.

Third, an integrated farm policy approach receiving considerable attention from various interest groups is a long term retirement program for erosive cropland. A number of options are available in designing such a program. If the least productive (least-cost) land is retired, erosion will be reduced. Unfortunately, the erosion control impacts will be limited

because the highly erosive lands are not necessarily the least productive. If the most erosive lands are retired, the reduction in erosion will be substantial but the reduction in surplus commodity production will not accomplish the desired farm price goals. If land retirement is targeted to highly erosive land removed on a competitive bid basis, farm income objectives are satisfied and a significant contribution is made toward conservation goals. This approach could easily be extended to the conservation of scarce groundwater supplies such as in the Ogallala Region. Such an approach can be cost-effective in both income maintenance and resource conservation.

CONCLUSIONS

We face a changed conservation policy environment as we enter the 1985 Farm Bill debates. The need to achieve consistent, effective, and efficient farm commodity and conservation programs is critical. An integrated approach may permit the achievement of these objectives while maintaining a productive resource base to satisfy future food, feed, and fiber needs.

HISTORY OF OPTIONS TRADING AND DEVELOPMENT OF THE AGRICULTURAL OPTIONS PILOT PROGRAM

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HISTORY OF OPTIONS TRADING IN THE U. S.

OPTIONS ON AGRICULTURAL COMMODITIES WERE THE FIRST OPTIONS TRADED IN THIS COUNTRY. FROM THE OUTSET, THEY HAD A RATHER CHECKERED HISTORY, INCLUDING CHARGES OF BOTH FRAUDULENT SALES PRACTICES AND MARKET MANIPULATION. AS EARLY AS 1874 THE ILLINOIS STATE LEGISLATURE BANNED OPTION TRADING, BOTH ON AND OFF EXCHANGES, BUT THE LAW WAS NEVER ENFORCED.

LOOKING BACK FROM MORE THAN 100 YEARS LATER, WE CANNOT BE SURE HOW MUCH OF THIS DISSATISFACTION WAS DUE TO ACTUAL PROBLEMS WITH OPTIONS THEMSELVES AND HOW MUCH WAS A REACTION BY PRODUCERS TO ADVERSE PRICE MOVES. BOTH FACTORS UNDOUBTEDLY CONTRIBUTED. BUT WHATEVER THE REASONS, OPTIONS CONTINUED TO BE HIGHLY CONTROVERSIAL, BEING ALTERNATELY PROHIBITED AND ALLOWED UNDER VARIOUS LEGISLATIVE INITIATIVES AND EXCHANGE RULE PROVISIONS.

WHEN CONGRESS WAS CONSIDERING THE LEGISLATION ULTIMATELY ENACTED AS THE COMMODITY EXCHANGE ACT OF 1936, OPTIONS, IN THE FORM OF "INDEMNITIES," WERE CITED AS A PRIME CAUSE OF EXCESSIVE PRICE MOVEMENTS THAT HAD CONTRIBUTED TO A 1933 COLLAPSE OF THE CHICAGO WHEAT MARKET IN WHICH TRADING WAS HALTED FOR SEVERAL DAYS. THE 1936 LEGISLATION, AS ENACTED, INCLUDED A COMPREHENSIVE STATUTORY BAN ON OPTIONS IN DOMESTIC AGRICULTURAL COMMODITIES.

By 1982, however, there had been a number of major changes relevant to options trading. For one thing, the regulatory environment had changed dramatically. The futures exchanges had greatly improved and expanded their self-regulatory capabilities. The National Futures Association ("NFA"), an industry-wide self-regulatory organization, was getting started. Also, the Commodity Futures Trading Commission Act of 1974 had established an independent federal regulatory agency with comprehensive oversight authority over both the exchanges and the NFA. The CFTC had, for example, developed a comprehensive and highly effective market surveillance system, designed to detect and prevent threats of price manipulation or other market abuses such as had been associated with pre-1936 options trading.

Also, options themselves had changed. The options traded at the time of the 1936 ban were non-tradeable "dailies" and "weeklies." They had very limited commercial utility due to their short duration. Furthermore, because one could exit an options position only by exercising into a futures contract, and such exercises were occurring at the end of every trading day, options exercises often caused market congestion at the close of futures trading.

The options being considered in 1982 were far different. They were derivative instruments, based on existing futures contracts and having the same time frame as the underlying futures. Because they would be tradeable, options could be offset against each other without entering the futures

MARKET. OPTIONS THAT WERE EXERCISED INTO FUTURES WOULD BE SUBJECT TO REGULATORY SAFEGUARDS TO GUARD AGAINST CONGESTION IN THE FUTURES MARKET.

IN ADDITION, THERE WAS AN EXAMPLE FOR AG OPTIONS TO FOLLOW. THE CFTC, AFTER A THOROUGH DELIBERATIVE PROCESS, HAD ALREADY AUTHORIZED A PILOT PROGRAM FOR NON-AGRICULTURAL OPTIONS ON DOMESTIC FUTURES EXCHANGES. TRADING IN NON-AGRICULTURAL OPTIONS BEGAN IN 1982 AND THE PROGRAM'S EARLY EXPERIENCE OF NO SERIOUS MARKET PROBLEMS, A HIGH DEGREE OF COMMERCIAL UTILITY, AND VIRTUALLY NO CUSTOMER COMPLAINTS HAS CONTINUED TO THIS DAY. POTENTIAL USERS OF AGRICULTURAL OPTIONS COULD THUS LOOK FORWARD TO A SIGNIFICANT PERIOD OF EXPERIENCE IN THE ORIGINAL NON-AGRICULTURAL PILOT PROGRAM (IT TURNED OUT TO BE TWO YEARS) TO WORK THE "BUGS" OUT OF EXCHANGE-TRADED OPTIONS BEFORE AGRICULTURAL OPTIONS WOULD BE READY TO TRADE.

FINALLY, CHANGING MARKET CONDITIONS WERE MAKING CLEAR THE NEED FOR ADDITIONAL MARKETING TOOLS FOR FARMERS. AS NOTED IN THE SENATE REPORT ON THE CFTC'S 1982 REAUTHORIZATION LEGISLATION:

> "AGRICULTURE HAS BECOME INCREASINGLY ORIENTED TO A WORLD MARKET. AS A CONSEQUENCE, U. S. COMMODITY PRICES ARE MORE RESPONSIVE THAN EVER BEFORE TO GLOBAL WEATHER CONDITIONS AND DEVELOPMENTS IN POLITICAL AND MONETARY POLICY. IT IS THUS LIKELY THAT U. S. COMMODITY PRICES WILL BECOME MORE VOLATILE, BECAUSE OF THE UNCERTAINTY STEMMING FROM THESE EXTERNAL FACTORS. CONSEQUENTLY, FARMERS NEED ADDITIONAL

MARKETING TOOLS WHICH HELP THEM TO MANAGE THE RISKS INHERENT IN DOWNWARD PRICE FLUCTUATIONS, WHILE LEAVING THEM FREE TO TAKE ADVANTAGE OF HIGHER PRICES AS THEY OCCUR." S. REP. NO. 384, 97TH CONG., 2ND SESS. 49-59 (1982).

IN VIEW OF ALL THESE FACTORS, AND WITH THE SUPPORT OF A NUMBER OF AGRICULTURAL ORGANIZATIONS, CONGRESS INCLUDED IN THE CFTC'S 1982 REAUTHORIZATION BILL A PROVISION LIFTING THE 1936 BAN AND AUTHORIZING THE CFTC TO ESTABLISH A THREE-YEAR PILOT PROGRAM IN AGRICULTURAL OPTIONS.

DEVELOPMENT AND IMPLEMENTATION OF THE PILOT PROGRAM FOR AGRICULTURAL OPTIONS

ONCE THE BAN WAS LIFTED, THE CFTC EMBARKED ON A LENGTHY DELIBERATIVE PROCESS TO DETERMINE WHETHER TO ALLOW SUCH OPTIONS AND, IF SO, UNDER WHAT CONDITIONS. THE COMMISSION WAS PARTICULARLY CONCERNED WITH GETTING THE VIEWS OF FARMERS AND AGRIBUSINESSMEN SO THAT ANY AGRICULTURAL OPTIONS FINALLY APPROVED WOULD BE USEFUL HEDGING TOOLS FOR THE AGRICULTURAL COMMUNITY.

IN FEBRUARY 1983, THE COMMISSION PUBLISHED AN ADVANCE NOTICE OF PROPOSED RULEMAKING, SOLICITING PUBLIC COMMENT ON A NUMBER OF BASIC POLICY QUESTIONS CONCERNING AG OPTIONS.

DURING MARCH, WHILE THE COMMENT PERIOD WAS STILL UNDERWAY, THE COMMISSION SPONSORED A SERIES OF PUBLIC INFORMATIONAL MEETINGS IN NINE CITIES AROUND THE COUNTRY. THESE MEETINGS WERE INTENDED TO GIVE FARMERS, AGRIBUSINESSMEN, AND AGRICULTURAL BANKERS AN OPPORTUNITY TO LEARN SOME BASIC

FACTS ABOUT AG OPTIONS AND TO HAVE THEIR QUESTIONS AND COMMENTS ON AG OPTIONS INCLUDED AS PART OF THE RULEMAKING PROCESS.

IN SEVERAL CITIES, SEPARATE ADDITIONAL MEETINGS WERE HELD WITH EXTENSION SERVICE PERSONNEL TO COORDINATE PLANS FOR EDUCATING PRODUCERS AS TO THE BASIC FACTS ABOUT THIS POTENTIAL NEW MARKETING TOOL. CFTC'S COOPERATIVE EFFORTS WITH THE EXTENSION SERVICE ARE CONSISTENT WITH SECTION 18 OF THE COMMODITY EXCHANGE ACT WHICH REQUIRES THE COMMISSION TO "ASSIST IN THE DEVELOPMENT OF EDUCATIONAL AND OTHER INFORMATIONAL MATERIALS REGARDING FUTURES TRADING FOR DISSEMINATION AND USE AMONG PRODUCERS, MARKET USERS, AND THE GENERAL PUBLIC."

IN JUNE 1983, THE COMMISSION APPOINTED AN AGRICULTURAL OPTIONS ADVISORY COMMITTEE WHICH I CHAIRED. THE COMMITTEE INCLUDED REPRESENTATIVES OF GENERAL FARM ORGANIZATIONS, SPECIFIC COMMODITY ORGANIZATIONS, FARMER COOPERATIVES, COMMERCIAL GRAIN COMPANIES, THE U. S. DEPARTMENT OF AGRICULTURE, AGRICULTURAL LENDERS, AND THE BROKERAGE COMMUNITY. THE COMMITTEE HELD THREE VERY PRODUCTIVE MEETINGS AND ITS VIEWS PROVED MOST HELPFUL TO THE COMMISSION. IN FACT, BECAUSE THIS COMMITTEE PROVED SO SUCCESSFUL IN ADVISING THE COMMISSION ON AG OPTIONS, WE ARE IN THE PROCESS OF RECONSTITUTING IT AS A NEW BROADER-BASED COMMITTEE WHICH WILL BE KNOWN AS THE AGRICULTURAL ADVISORY COMMITTEE AND WILL ADDRESS THE FULL RANGE OF AGRICULTURE-RELATED ISSUES.

On October 14, 1983 the Commission published a set of proposed rules for an AG options pilot program. The proposed rules included: limiting the pilot program to options on futures only (at least initially); fixing a limit of two options per exchange; and, in general, conforming the AG options program to the already-existing successful pilot program in non-agricultural options. The proposed rules mirrored the original pilot program in handling the difficult question of when the options should expire, but this issue involved a lot of time for the Advisory Committee and the Commission.

The question of when options should expire involves balancing the danger of possible market disruptions against the need for commercially useful contracts. If options expire too near to the close of trading in the underlying futures contract, there could be the danger that large numbers of options may be exercised into the futures contract, greatly increasing open interest, just as the contract is expiring. The result could be market congestion and greater susceptibility to manipulation.

On the other hand, too long an interval between options expiration and the close of futures trading might result in unstable basis relationships (cash to options). This could complicate the hedging process by forcing the producer to choose actions such as lifting his hedge before cash and futures converged or exercising into the futures market and assuming the liability for margin calls and the "locked-in"

PRICE HE HAD ORIGINALLY TRIED TO AVOID THROUGH THE OPTION PURCHASE.

THE PROPOSED REGULATIONS ADDRESSED THIS ISSUE BY ADOPTING THE "10-DAY" RULE ALREADY IN EFFECT UNDER THE ORIGINAL PILOT PROGRAM. UNDER THIS RULE, OPTIONS ARE GENERALLY REQUIRED TO EXPIRE 10 DAYS BEFORE THE EARLIER OF THE LAST TRADING DAY OR FIRST NOTICE DAY OF THE UNDERLYING FUTURES CONTRACT. HOWEVER, THE COMMISSION WILL GRANT EXCEPTIONS FROM THE RULE, ON A CASE-BY-CASE BASIS, WHERE AN EXCHANGE CAN DEMONSTRATE THAT A SHORTER INTERVAL WILL NOT ENDANGER THE MARKET.

THE PROPOSED REGULATIONS ALSO INCLUDED OTHER PROVISIONS TO SIMPLIFY TRADING AND PROTECT THE FUTURES MARKETS FROM CONGESTION. FIRST, THE OPTIONS WOULD BE TRADEABLE SO THEY COULD BE OFFSET WITHOUT BEING EXERCISED. THIS SYSTEM IS ANALOGOUS TO THE SITUATION IN FUTURES MARKETS WHEREBY MOST CONTRACTS ARE SETTLED BY OFFSET RATHER THAN DELIVERY. FOR THOSE OPTIONS WHICH WERE EXERCISED, THE TRANSACTIONS WOULD BE EXECUTED, AND THE RESULTING FUTURES POSITIONS ASSIGNED, BY BOOK ENTRY AT THE CLEARING HOUSE. FINALLY, THE PROPOSED RULES CONTEMPLATED THAT OPTIONS WOULD THEMSELVES BE SUBJECT TO POSITION LIMITS AND THAT FUTURES POSITIONS RESULTING FROM EXERCISE WOULD LIKEWISE BE SUBJECT TO THE FUTURES POSITION LIMITS, THUS PREVENTING POSITIONS GREATER THAN COULD BE ACHIEVED THROUGH FUTURES TRADING ALONE.

THESE PROPOSED RULES WERE GENERALLY SUPPORTED BY THOSE WHO COMMENTED AND WERE PUBLISHED WITHOUT CHANGE AS FINAL REGULATIONS ON JANUARY 16. AFTER A CONGRESSIONAL LAYOVER

PERIOD DURING WHICH THE HOUSE AND SENATE AGRICULTURE COMMITTEES REVIEWED THE FINAL RULES, THEY BECAME EFFECTIVE ON MARCH 19, 1984.

THE COMMISSION THEN BEGAN ACCEPTING AND REVIEWING CONTRACT APPLICATIONS FROM FUTURES EXCHANGES HAVING UNDERLYING AGRICULTURAL FUTURES CONTRACTS THAT MET THE THRESHOLD LIQUIDITY STANDARD OF TRADING AN AVERAGE OF AT LEAST 1,000 CONTRACTS PER WEEK.

WHILE THIS REVIEW PROCESS WAS UNDERWAY, THE COMMISSION PARTICIPATED IN A FURTHER SERIES OF OPTION EDUCATION CONFERENCES FOR AGRICULTURAL INDUSTRY LEADERS ORGANIZED THROUGH USDA EXTENSION AND CO-SPONSORED BY VARIOUS STATE EXTENSION SERVICES, LAND GRANT UNIVERSITIES, USDA EXTENSION, THE CFTC AND OTHERS. AGAIN, THE PURPOSE WAS TO ACQUAINT THE AGRICULTURAL COMMUNITY (INCLUDING ELEVATORS, PROCESSORS, SHIPPERS AND LENDERS AS WELL AS PRODUCERS) WITH THE BASIC FACTS CONCERNING THIS ADDITIONAL MARKETING TOOL THAT WOULD SOON BECOME AVAILABLE.

ON OCTOBER 29, 1984 THE COMMISSION UNANIMOUSLY APPROVED AN INITIAL GROUP OF SIX OPTIONS ON DOMESTIC AGRICULTURAL FUTURES CONTRACTS:

SOYBEANS	CHICAGO BOARD OF TRADE
LIVE CATTLE	CHICAGO MERCANTILE EXCHANGE
COTTON	NEW YORK COTTON EXCHANGE
HARD RED WINTER WHEAT	KANSAS CITY BOARD OF TRADE
HARD RED SPRING WHEAT	MINNEAPOLIS GRAIN EXCHANGE
SOFT WINTER WHEAT	MIDAMERICA COMMODITY EXCHANGE

THREE ADDITIONAL CONTRACTS -- CORN (CBT), LIVE HOGS (CME), AND A SECOND SOYBEAN OPTION (MACE) -- ARE EXPECTED TO BE CONSIDERED SOMETIME IN EARLY 1985.

Although the official term of the pilot program is three years, the program will be closely monitored from the outset and will be subject to ongoing review. As with the original options pilot program, the Commission recognizes that market participants will need advance notice of whether or not the program will be made permanent, modified or terminated. Therefore, it will give notice of its determination in this regard well before the expiration of the pilot program.

If the AG option pilot program follows the example of its predecessor pilot program, and interim review shows that the options are not experiencing market or customer protection problems, it is quite possible that the program will be expanded to allow additional options before the full three-year term is up, as was the case with the original pilot program.

Before concluding, I would like to mention one other important aspect of the pilot program -- the Commission's surveillance function. For options, the exchanges have been assigned the primary direct regulatory responsibility, subject to Commission oversight. Thus, the Commission seeks to detect and prevent price manipulation or market disruption, in either the agricultural options markets or their underlying futures markets, through strict oversight of comprehensive exchange self-regulatory efforts.

Exchanges routinely furnish to the Commission daily information concerning market activity (price, volume, open

INTEREST, AND EXERCISES), TRANSACTIONS AND OPEN POSITIONS OF CLEARING MEMBER FIRMS, AND WEEKLY POSITION AND IDENTIFICATION INFORMATION CONCERNING "LARGE" OPTION TRADERS (25 OPEN POSITIONS OR MORE) IN SPECIFIED EXPIRATION MONTHS. THE COMMISSION MAY ALSO OBTAIN, BY SPECIAL CALL, SPECIFIED INFORMATION CONCERNING ANY ACCOUNT IN WHICH THERE ARE OPEN OPTION POSITIONS AND OPTION TRADING.

TO DETERMINE MARKET COMPOSITION, EXCHANGES MUST ALSO PROVIDE MONTH-END REPORTS OF POSITIONS IN EACH OPTION CONTRACT FOR EACH CLEARING MEMBER, SHOWING AGGREGATE POSITIONS OF COMMERCIAL AND NONCOMMERCIAL TRADERS. IN REVIEWING THESE REPORTS, THE COMMISSION'S ROLE IS NOT TO JUDGE WHETHER PRICES OR PREMIUMS ARE "TOO LOW" OR "TOO HIGH." RATHER, WE SEEK TO PRESERVE A COMPETITIVE MARKETPLACE IN WHICH THE FORCES OF SUPPLY AND DEMAND OPERATE FREELY TO DETERMINE PRICE. IN THAT CONTEXT, THE RELATIONSHIPS AMONG CASH, FUTURES, AND OPTIONS PRICES ARE MORE IMPORTANT THAN PRICE LEVELS AS A SIGNAL OF WHETHER REGULATORY ACTION MIGHT BE REQUIRED.

CAREFUL REVIEW OF EXCHANGE-REPORTED INFORMATION BY COMMISSION SURVEILLANCE ECONOMISTS, COMBINED WITH PERIODIC COMMISSION AUDITS OF EXCHANGE SURVEILLANCE AND RULE ENFORCEMENT PROGRAMS, HAS PROVEN AN EFFECTIVE SAFEGUARD IN THE ORIGINAL PILOT PROGRAM. WE BELIEVE THIS SAME SYSTEM WILL WORK EQUALLY WELL FOR AGRICULTURAL OPTIONS.

IN SUMMARY, THE COMMISSION AND ITS STAFF HAVE EXPENDED CONSIDERABLE TIME AND EFFORT IN ESTABLISHING THE AG OPTION

PILOT PROGRAM, PROCEEDING MORE SLOWLY AND CAUTIOUSLY THAN MANY OF THE PROPONENTS OF OPTIONS MIGHT HAVE WISHED. HOWEVER, WE BELIEVE THIS DELIBERATE APPROACH WAS NECESSARY TO ASSURE THAT THE CONTRACTS ULTIMATELY DESIGNATED WOULD HAVE THE POTENTIAL TO BE COMMERCIALLY USEFUL HEDGING AND MARKETING TOOLS FOR THE AGRICULTURAL COMMUNITY. I BELIEVE WE HAVE ACCOMPLISHED THAT. THE REST IS UP TO THE FORCES OF THE MARKETPLACE.

AGRICULTURAL OPTIONS:OBSERVATIONS AFTER ONE MONTH

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OUTLOOK '85



I have been asked to comment on agricultural options from an exchange perspective. In doing so I want to stress the subtitle of this paper - "Observations After One Month." Agricultural options are extremely new and it is surely premature to draw any firm conclusions about trading patterns, potential hedging use, or likely future volume. I will make a few comments on these matters, but they are to be taken only as observations to date. In addition to indicating, I hope, a certain modesty, the subtitle is also a bit misleading. Much of what I will discuss occurred prior to the October 30, 1984, initiation of trading in agricultural options. I want to make some comments on the process of agricultural option contract development at the exchange level because I believe it was quite different than is usually the case for futures contract innovation. The result is a cohort of option contracts with many basic similarities but a few intriguing differences.

Before proceeding, however, let me indicate briefly the nature of my own involvement in the agricultural option pilot program. When MidAmerica began to consider development of agricultural options I had relatively limited knowledge regarding either the theory or potential uses of these instruments. However, as director of the Exchange Research Department, I was charged with developing MidAmerica's wheat and proposed soybean option contracts. In doing so I worked in unusually close cooperation with two other exchanges, a point I will return to later. During the process of contract development I became convinced of the potential hedging and price discovery utility of options on agricultural futures. In fact, I was so convinced that I persuaded MidAmerica's Board of Directors to reorganize the research department into one of research and education. In fulfilling that expanded mandate I have participated in educational seminars for producers, merchandisers, lenders, and floor traders. In addition I have also written much of MidAmerica's educational material on agricultural options. Thus my involvement is a multi-faceted one; the "exchange" perspective I bring to this discussion is filtered through the lens of several different groups. Finally, like many in this new field, I am still learning - every time I do a seminar or write a brochure I find out something new about the behavior of these fascinating instruments.

I. The Agricultural Option Development Process

Although the process of contract development by futures exchanges has received some amount of attention, much remains unstudied and undocumented. My own impressions of this process are as follows. Exchanges are, on the official level, normally rather secretive in the early stages of contract development. It is believed that premature divulgence of the nature of contracts under consideration will forfeit important lead time in market development available to the first exchange to list a particular commodity. This is reinforced by the conventional wisdom of the industry that once established at one exchange a particular futures market cannot be taken away by another exchange. (In fact it seems to me this proposition has been relatively untested until quite recently.)

I have labeled this the "official" or "formal" level of exchange interaction to distinguish it from what happens on the informal level. There is a network of communication in the industry that exists between the staff of different exchanges including their respective research staffs. This network usually provides some advance intelligence to competing exchanges. However, I believe it is the case that if two or more exchanges are working on similar contracts, there is relatively little sharing of information regarding the specifics of contact terms and conditions. A recent example is the development of crude petroleum contracts by the New York Mercantile Exchange, the Chicago Board of Trade, and the Chicago Mercantile Exchange.

The development of agricultural option contacts occurred in an environment somewhat more conducive to mutual interchange of ideas. The Commodity Futures Trading Commission (CFTC) established guidelines governing many of the salient aspects of contract terms including the possible range of contracts (an exchange had to trade the underlying futures), contract months, expiration dates, exercise procedures, and a schedule for contract submission (to be considered in the first CFTC cohort). Unlike the usual futures contract innovation process, all eligible exchanges were simultaneously aware of the possibility for contract innovation and of the rules governing such innovation. While each exchange had to decide whether or not to participate, there existed a publicly available map of the development process once such a decision was made.

Beyond the decision to participate in the process of contract development there was another important decision that faced at least three of the eligible exchanges. Under the regulations governing the pilot program each exchange could have up to two agricultural option contracts but also had to designate one contract as the first choice for Commission review. Thus the Chicago Board of Trade (CBT) had to select two and then one from the following: soybeans, corn, wheat, oats, soybean meal and soybean oil. The Chicago Mercantile Exchange (CME) two and then one from the following: pork bellies, live cattle, feeder cattle, and live hogs. Similarly, the MidAmerica Commodity Exchange

(MidAm) had to choose two and then one from the following: soybeans, corn, wheat, live cattle and live hogs.

After considerable discussion the CBT chose the two largest volume agricultural contracts, soybeans and corn, designating the largest volume contract among those two (soybeans) as the first choice for Commission review. The CME also selected the two largest volume contracts, live cattle and live hogs and again designated the largest volume commodity, live cattle, as their first choice. MidAmerica, in contrast, chose the commodities with the largest and third largest volume, soybeans and wheat, respectively, as the two for option contract development and designated wheat rather than soybeans as the first choice for Commission review. The Exchange did so in part because of the regulations governing the option pilot program, the limitation of each exchange to two contracts, and in part because of industry pressure. More significantly, MidAmerica proposed a wheat option on five rather one of the underlying wheat futures contracts. The expressed desires of participants in the wheat industry were particularly important in this latter decision.

Was there any other criterion on which such choices could have been made? From the perspective of the exchanges at least one other occurs to me: the degree of price volatility in the underlying futures. Since option premiums move less than the prices of the underlying commodity it might be hypothesized that the development of a new market, attractive to both hedgers and investors, could best be assured by selection of commodities that promised substantial price movement. Had the exchanges instead used volatility as the criterion for contract selection, the CBT would have submitted a soybean and wheat contract (soybeans would have remained the first choice); the CME would have submitted pork bellies and live hogs with the former the first choice. Based on the immediate past three years MidAmerica's submissions would have been soybeans and live hogs with the latter the first choice for Commission review. The fact that exchanges did not proceed in this manner is, I think, at least in part due to the more public nature of the option contract development process and the salience given by the CFTC to industry participation in contract development.

Outside Chicago both the Minneapolis Grain Exchange (MGE) and the Kansas City Board of Trade (KCBT) developed a wheat option contract and the New York Cotton Exchange (NYCE) developed a cotton option. For the former two exchanges there was not the issue of which option contract to propose, nor did there have to be a first and second choice designated. However, in at least one case, the KCBT, there was considerable discussion as to the desirability of participating in the option pilot program at all.

Although staff from each of the participating exchanges shared ideas during the process of contract development, the three exchanges proposing wheat option contracts had a particularly close working relationship. All three are relatively small exchanges with limited research staffs and

budgets. Each made the decision, largely informally, that contract development could occur most readily and the utility for potential hedgers would be maximized if contract terms and conditions were discussed at length with the other exchanges as well as with industry participants. Innovation was a joint product rather than one deriving from the thinking of a single exchange.

For example, each initially considered $0.20/bu as a strike price interval for wheat options. However, discussion between staff of the three exchanges and simulation of the $0.20/bu strike price interval over previous years caused the three to submit an intial variable increment proposal ($0.20/bu above $4.50; $0.10/bu below $4.50). Further discussion resulted in common amendments to provide for a uniform $0.10/bu strike price increment. Similarly, all three exchanges intially proposed adding new strikes to all listed months simultaneously and each later dropped such proposal. (In this latter instance each of the three smaller exchanges watched the decisions of the CBT closely). Several other examples of this joint innovation process could be cited including joint consultation in developing responses to CFTC inquiry letters on the proposed contracts. The result of what is probably a unique process of contract development is three remarkably similar wheat option contracts. This should facilitate the ability of potential contract users to understand the terms of each contract and to carry out inter-market spreading. Of course there is a trade off here. It could be argued that the process of joint contract development eliminated possible unique features from emerging in the final wheat option contracts that might have been of particular utility to the wheat industry.

Despite the many commonalities in the six currently listed agricultural option contracts, there are some interesting differences between them. These include: (1) the relationship between strike price increments and the futures daily price limit; (2) the use by one exchange of a variable strike price increment; (3) the provision by another exchange for delisting an inactive series; (4) the relationship between the minimum price fluctuation on the underlying futures and the option contract; and the decision on imposition of daily price limits on the option contract. I will briefly discuss each of these points. (For reference a chart in the appendix summarizes the major terms and conditions of each currently listed option contract.)

All four exchanges listing a grain option specified strike price increments less than the maximum daily price move on the underlying futures. (The CBT's proposed corn option specifies a strike price increment of $0.10/bu, equal to the futures daily price limit.) In contrast, both the CME and the New York Cotton Exchange have specified strike price intervals in excess of the maximum daily price limits on the underlying futures. In fact, because grain futures provide for expanded daily price limits, the grain options have the potential for encompassing at least two strike prices within the daily futures trading range.

A comparison of strike price increments with average price levels does result in roughly similar values of 2.5 - 3.5 percent.

Although several exchanges initially proposed variable strike increments, only the NYCE has retained such provision in the final contact terms and conditions. From the perspective of option theory a variable strike price increment makes good sense. Prices of most commodities exhibit different volatilities at various levels and the result can either be a proliferation of strikes or an insufficient number of strikes with a uniform strike price increment rule. However, the experience of the three exchanges listing wheat options (probably duplicated by other exchanges) was a reluctance on the part of industry participants to accept this more complicated strike price system. Each exchange that modified a submission to adopt a uniform strike price increment chose the lower increment of the two initially proposed. This should have the result of lowering the average premium paid, increasing the attractiveness to potential hedge users. Whether the trade off will be a proliferation of strike prices remains to be seen. In consideration of this latter point an interesting provision is the KCBT rule that allows delisting of a series if open interest in the same falls to zero and no trading occurs over a period of ten days. The impact of the strike price rules should be examined closely after some experience with trading of options.

As indicated by the concept of option "delta," option premiums may be expected to move substantially less than the underlying futures contract. The only exception to the foregoing is a deep in-the-money option which may move on a one-to-one basis with the futures. Given the lower volatility of option premiums four exchanges chose to specify a minimum price fluctuation on the premium less than that for the underlying futures. Such provision may facilitate delta hedging and construction of delta neutral positions. In contrast both the CME and the NYCE specified a minimum premium fluctuation equal to that for the underlying futures. The former exchange considered a smaller minimum tick on the option but decided against it in part on operational grounds - the difficulty of market participants remembering the digits beyond those reported would increase if option premiums were traded in .0125 cent ticks.

The non-linear relationship between premium movements and futures price movements also produced different decisions on the imposition of daily price limits for the option contracts. Again the four grain options are similar; each imposes a daily price limit equal to that of the underlying futures. In contrast, neither the cattle nor the cotton option includes a daily price limit. This is especially striking in the former case since the underlying futures does not allow for expansion of daily price limits in response to limit moves on the previous day(s). A case can be made for either approach. Elimination of daily price limits will allow consistency between series within an option class on days in which the futures locks limit; however premium relationships and thus margin flows on futures/option spreads

will be distorted, especially for deep in options. Imposition of option daily price limits will distort premium relationships and thus margin flows on inter-series option positions. These same daily price limits on the option will allow some futures/option spreads, particularly those at or out-of-the-money, to remain reflective of actual market positions on days of limit futures movements while distorting price relationships for other series. At this point neither of these two methods adequately responds to all potential problems. Both may be replaced after some experience of trading, perhaps with the elimination of limits on both futures and options.

Before turning to a discussion of volume and volatility during the first month of trading I want to make one comment on the issue of option expiration date. Under the regulations governing the pilot program the CFTC requires an option to expire at least ten business days prior to the first notice day on the underlying futures contract unless an exchange could demonstrate compelling reasons for a later expiration date. Except for cattle, all options currently listed are written to meet these requirements. However, at MidAmerica we have received several comments from hedge users of options expressing a wish to have a later expiration date due possible basis risk. For example our March wheat option (also the CBT March soybean option) will expire on February 8th. Since this is a pilot program it may be in order to suggest a reconsideration of this requirement, perhaps moving it to the last Friday prior to first notice day. This would, I believe, facilitate use of options by potential hedgers without causing undue market congestion.

II. The First Month of Trading

Throughout this section my comments are based upon data extending through the week ending November 23, 1984 unless otherwise indicated. As I stated at the outset, given this relatively short period for examination, all conclusions are extremely tentative.

The first question of interest is undoubtedly that of volume on the six currently listed agricultural option contracts. Using raw volume figures the CBT's soybean option has been by far the most successful contract, trading in excess of 1500/day over the course of the first four weeks. One other contract, the CME's live cattle options, is trading 400-500/day. Two other contracts, cotton on the NYCE and wheat on the MidAm are trading between 50 and 100 per day while wheat on the MGE and the KCBT are trading between 25 and 50 contracts per day. (It should be noted that if MidAmerica's option volume were translated into numbers of futures contracts trading levels would be 250-300/day).

If we make the reasonable assumption that option volume will be less than the volume on the underlying futures, a comparison between option contracts drawn upon underlying futures contracts

exhibiting substantially different volume levels is incomplete. How are the option contracts doing on a relative basis, controlling for underlying futures volume?

This is not simply relevant for purposes of mathematical comparison but may be of significance to potential market participants as well. Options and futures are complementary instruments and each may be used in conjunction with the other, both by hedgers and investors. An individual or firm familiar with a particular futures market may be interested in how option volume and futures volume for the same contract compare rather than how volume on different option markets compare. Thus a comparison such as found in Table 1 below may be of primary interest to such market participant. Clearly the percentage range of option volume as a share of the underlying futures volume is not as substantial as the variation in the absolute figures.

Table 1
Average Volume: Options/Underlying Futures

Exchange	CBT	CME	KCBT	MidAm	MGE	NYCE
Period						
10/30 - 11/2	4.58%	2.39%	1.23%	6.97%	2.26%	1.98%
11/5 - 11/9	3.72%	2.62%	1.28%	6.72%	1.77%	2.15%
11/12 - 11/16	9.63%	3.23%	1.25%	1.44%	0.97%	1.08%
11/19 - 11/23	5.89%	2.85%	0.44%	2.81%	0.93%	1.06%
10/30 - 11/2	6.47%	2.92%	1.11%	4.41%	1.50%	1.60%

Table 1a

Average Volume: Options/Underlying Futures,
Non-Agricultural Options, Jan - June 1983

	Option			
Treasury Bonds (CBT)	Gold (COMEX)	S&P* (CME)	NYSE* (NYFE)	Sugar (CSCE)
5.90%	2.58%	3.96%	10.72%	0.27%

*Feb - June 1983

The use of volume figures at this point to project futures trends is certainly premature. It may help, however, to compare trading on agricultural options with the early period of trading on non-agricultural options as is done in Table 1a. The period covered in the table, Jan - June 1983, represents the early

months of trading (the first group of non-agricultural options began trading in October of 1982) but also includes the two stock options that were not listed until January of 1983. Note the similarity of relative volume figures between tables 1 and 1a. This provides further support for the argument that any assessment of volume is premature; it also suggests that all of the agricultural options currently listed exhibit a potential for eventual success.

Probably the most common question I have received while presenting educational seminars on the use of options is "How much will the premiums be?" Some skepticism has been expressed concerning the use of options because of possible uneconomic premium levels. An examination of premium levels against the apparent price risk of the underlying commodity is of interest. One manner of making such comparison is to examine the implied volatility priced by option premiums against the actual volatility observed in the prices for the underlying futures. There are a variety of ways in which such comparisons can be constructed, depending upon one's choice of a time period for observation of futures prices as well as the prevailing expectations about futures price movements. I have chosen a quite rudimentary approach. Table 2 compares the volatility of the underlying futures during the period October 30 - November 23, the first four weeks of option trading, with the implied volatility of the nearest-the-money put and call for the same period. The comparison is limited to three option contracts, the CBT's soybean option, the CME's live cattle option, and MidAm's wheat option. Further, the Table considers only the nearby contract.

Table 2
Implied Volatility, Nearby Contract, Nearest-the-Money Strike and Annualized Underlying Futures Volatility, 10/30-11/23

Exchange	Implied Volatility Puts	Calls	Observed Volatility, Underlying
CBT	21.36%	22.13%	17.96%
CME	12.54%	12.38%	11.72%
MidAm	12.30%	12.21%	13.27%

It is obvious that on both the CME's live cattle option and MidAmerica's wheat option the implied volatility for the nearest-the-money strike, either puts or calls, is quite close to the observed volatility on the underlying futures. In the case of the CBT's soybean option contract the premium levels appear to reflect a volatility somewhat above that observed on the underlying futures. For example, on a $6.50 January soybean put option traded on November 12th, the Black option pricing model, using the observed futures volatility for the 10/31 - 11/23 period, generates a premium of $0.21 rather than the actually observed settlement premium of $0.235. It could be argued that

futures volatility may be expected to increase during the closing weeks of an expiring contract and therefore option premiums will reflect this expected increase in volatility prior to that time. Alternatively, it may be the case that the market is currently overbalanced on the buy side.

Despite this variation between implied/observed volatilities, it seems to me that the overall assessment is one quite favorable to the new markets. Premium levels appear to accurately reflect the relatively quiet markets of recent months. In fact, the implied volatility on the cattle and wheat options indicate an ability of extremely young markets to incorporate a quite unusual pricing environment into option premiums. By historical standards both markets are exhibiting almost preternaturally low volatility. For example the USDA has calculated cattle and wheat (SRW) futures price volatility over 60 day periods during 1974-1982. Price volatility for cattle ranged from a low of 11 to a high of 57 percent; for wheat from a low of 14 to a high of 66 percent. Referring again to Table 2 it is clear that the observed volatilities reported for the period of option trading are at or below the bottom of this range (in the case of MidAmerica's wheat futures the low observed volatility extends prior to the initiation of option trading). The ability of the new option markets to accurately reflect these volatility levels must be considered an impressive performance. Further work on implied volatility and the volatility of the underlying futures can and should be done for different option months and by points in the life of a typical option contract.

We can extend our examination of pricing efficiency in these markets further by asking about the implied volatilities across series for the same option class. Because of the large amount of potential data available, I have simply selected three days from each of the three option contracts discussed above. Table 3 below contains the results of this inquiry. Except for the relatively low inter-series variation on the MidAm wheat option, it is clear that there remains noticeable inter-series variation in implied volatility. However, whether this is excessive is not clear, particularly since these figures include some rather inactive series. An earlier study of the CBT T-Bond option contract found variations in inter-series implied volatility ranging from 1.4% to 11.0% on the same trading day. Certainly the observed range on the sample days listed below falls within this range. It does suggest, however, that inter-series arbitrage opportunities remain in the agricultural option markets as of this time.

Let me conclude this brief examination of the first month of option trading by noting preliminary answers to two frequently asked questions. First, what impact will option trading have on volume in the underlying futures? Table 4 presents evidence that, at least during the first month of trading, option trading did not reduce futures volume when compared with the month prior to the listing of options. Of course additional time must pass before we can answer this question definitively. Second, will

at-the-money put and call premiums be approximately equal (this question is of particular importance in assessing comparative returns to a holding cash/buying put pricing strategy vs a selling cash/buying call pricing strategy). There were several days on which the nearby soybean or wheat futures settled near, although never precisely at, an option strike (this did not occur on cattle during the period under consideration). In each case the observed put and call premiums were extremely close together with almost identical implied volatilities.

Table 3
Implied Volatility by Series, Nearby Option (Sample Days)

Chicago Board of Trade

Number of Strikes Included	Date	Range of Implied Call Volatility	Range of Implied Put Volatility
5	11/2	3.39%	0.40%
5	11/12	1.25%	6.81%
4	11/23	5.10%	2.59%

Chicago Mercantile Exchange

Number of Strikes Included	Date	Range of Implied Call Volatility	Range of Implied Put Volatility
5	11/1	1.92%	2.09%
5	11/13	4.88%	2.75%
5	11/19	2.98%	4.93%

MidAmerica Commodity Exchange

Number of Strikes Included	Date	Range of Implied Call Volatility	Range of Implied Put Volatility
5	10/31	0.43%	0.46%
3	11/8	0.31%	0.42%
4	11/20	0.39%	0.48%

Table 4
Daily Average Futures Volume: October 1984/November 1984*

Exchange	Ratio (Oct/Nov)
CBT	1.13
CME	1.36
KCBT	0.89
MidAm	1.09
MGE	2.28
NYCE	1.06

*first half

III. Outlook

What is the outlook for agricultural options? Here I will suggest only three points. First, I believe that options will have a place in the structure of agricultural markets. Producers may become more involved in options than in futures but, initially, I think the technology of pricing through options will be brought to producers in much the same manner as futures: by way of contracts with downstream merchandisers. Several elevators are already proposing to offer producers contracts specifying a floor price or the market, whichever is higher. The elevator simply purchases a put option and includes the premium in the service charge to the producer. I do not yet know of similar efforts in livestock but can see no reason why such should not be possible.

Second, it is unlikely that we will see premiums this low for very long or very many times in the future. As noted previously, options premiums, particularly for cattle and wheat, ware pricing unusually quiet underlying markets quite accurately. For those seeking price protection through purchase of an option this is an opportune period.

Lastly, I expect that we will all learn considerably more about these fascinating instruments over the coming year. I am looking forward to that experience.

Currently Listed Agricultural Option Contracts: Major Features

Exchange	CBT	CME	KCBT	MACE	MGE	NYCE
Option	Soybeans	Cattle	Wheat (HRW)	Wheat (SRW)*	Wheat (HRS)	Cotton
Strike Price Interval/Daily Futures Price Limit	25c/30c	2c/1.5c	10c/25c	10c/20c	10c/20c	2c/1c**
Minimum Price Increment on Option	1/8c	.025c	1/8c	1/8c	1/8c	1/100c
Minimum Price Increment on Futures	1/4c	.025c	1/4c	1/8c***	1/8c	1/100c
No. of Strikes	7	7	7	7	7	5
Expiration	(1) All grain options expire on last Friday which precedes first notice day on the underlying futures by at least 10 business days (2) Cattle options expire on the last Friday which precedes first notice day on the underlying futures by at least 3 business days (3) Cotton options expire on the first Friday of the month prior to the futures delivery month					
Daily Price Limit	30c	none	20c	20c	20c	none
Trading Months	Same as futures for all except cotton which lists a subset of futures months					

*MACE wheat futures price SRW although HRW and HRS are also deliverable

**NYCE cotton option uses 1c strike price intervals on the two nearby months when futures are below 74.5c

***Although contract rules allow futures trading in 1/8c fluctuations the normal trading increment is 1/4c

AGRICULTURAL OPTIONS: THE OUTLOOK FOR FARMERS' USE IN MARKETING MANAGEMENT

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Introduction

It is a real pleasure to be able to discuss the implications of the new agricultural options contracts for farmer marketing management. I must confess to a considerable degree of nervousness in this situation. I am sure several in the audience are better informed on the intricacies of options trading than I am. Most importantly, however, my fear is rooted in the lack of historical experience with agricultural options. The renewed trading of options on agricultural futures is just over one month old. While the exchanges and the Commodity Futures Trading Commission (CFTC) have experience from the trading of options on other commodities, our current experience base with agricultural options is small. Thus, much of what I will discuss today is more in the realm of the theoretical than the result of applied research. I will try to keep my remarks close to the reality of farmer marketing management.

I want to discuss four areas which I think are important in determining the extent to which options become a common feature of farmer marketing management.(1,2) First, I think it is important to go beyond the "price insurance" orientation in considering options as a part of farmer marketing plans. Second, I think that the information content of an effectively functioning options market may be as important as the use of the option contracts as trading vehicles. Third, it is my view that in order for farmers to find the trading of agricultural options accessible, marketing firms will need to be able to develop related contracts which reduce the barriers to options trading. Finally, I think we must be sure we evaluate the CFTC agricultural options pilot program in the context of the current alternative marketing institutions including the role of the government as a buyer of commodities and a bearer of price risk.

Options as a form of "Price Insurance"

The idea that buying agricultural options offers a form of "insurance" aganist unfavorable price change (with the opportunity to benefit from favorable price moves) has been the theme of much of the publicity about agricultural options. The most obvious strategies for farmer use of options as price insurance involves buying put or call options. The farmer who is concerned about a potential downward movement in prices could buy a put option to "insure" a known return if prices fell. Similarly, a farmer who was concerned that prices of inputs might rise could buy a call option to provide an offsetting return if prices go up. The cost of providing for this "price insurance" is the premium plus commission costs. The exact economic outcome depends on the relationship between movements in premiums and movements in prices in local the markets where farmers buy and sell. Thus, trading options have an element of uncertainty. The key here is that with options the farmer is protected from negative price change and can benefit from positive price change.

If we can assume that option premiums and local market prices move in a predictable manner so that "basis risk" is reasonable, then the advisability of trading options to "insure" input or product prices depends on the price outlook for the commodity; the impact that the worst price outcomes would have on the farmers current profitability and solvency as compared to the cost of the options trade (premium plus commission). It is important to note that from the "price insurance" perspective farmers would be most likely to trade options when damage from unfavorable price moves would be severe but the gains from favorable price moves could be large and have a high likelihood of happening. In this situation the purchase of a put or call option could be preferred to forward pricing with futures or forward contracts because it limits the worst price outcome with limited reduction in the best price outcome.

A numeric example of buying a put option may be useful. Suppose farmer Smith is feeding cattle expected to be ready for market in late February. Smith knows that his cost of production is $62.00 per hundred. Smith also knows that a loss on this lot of cattle could be the "final straw" pushing him into financial trouble. Smith can forward price by selling February futures at $65.00. Assuming a $2.00 basis under February futures, he can project a $1.00 return. Smith can alternatively buy a $66.00 put on the February futures. This would also assure a return if prices turned downward ($66.00 -$2.00 basis -$1.90 premium =$62.10 expected minimum price ignoring trading commissions) but would allow Smith to earn more if prices rose. Thus, if the price outlook is for improving prices, yet Smith would be severely hurt by a decline in prices he might choose the put option over the forward pricing opportunity. The expected minimum price is lower but the opportunity to benefit from price improvement is retained.

If Smith chooses to buy the put and prices fall, he has two alternatives for using the option position to offset the price

decline. The likely choice is to sell the put option. With falling prices, the premium on the put option should be increasing. If the premium increases in proportion to the decline in prices, Smith could sell his option position and use the revenue to offset the decline in cash price. Alternatively, Smith could exercise the put and take the short position in futures. This would require paying a futures commission and posting a margin deposit. Thus, Smith seems unlikely to choose this course of events unless trading out of the option is comparatively costly.

Similar examples could easily be created for buying call options in association with expected input purchases. Again the key to whether options or other forward pricing techniques are chosen appears to be the price outlook, the size of the premium, and the farmer's ability to withstand losses from unfavorable price changes. (Much of the above is illustrated in Kenyon. He also discusses the implications of yield risk which are not discussed here. Futures Magazine also had a recent article on options as price insurance.)

The "price insurance" rationale for options trading as a part of producer marketing management taken to the extreme may reflect the narrow view of producers as risk avoiders. While this view may be correct, I believe that we will anticipate farmers' use of options more accurately if we assume they are continually seeking ways to balance the level of risk and reward. If we take this view, we open the possible combinations of options trading with other marketing alternatives immensely. We open the possibility of farmers as sellers of options.

Farmers as Option Sellers - When farmers are viewed as choosing among risk and reward combinations across a broad spectrum, then selling options may be attractive under certain circumstances. The option seller is exposed to the actions of the option buyer. For this exposure the seller receives the premium less commission. The opportunity for gain occurs if the premium can be earned without having to perform on the option. For farmers this potential for earning may be attractive to inventory holders who expect prices to remain relatively stable. It may be useful to consider a situation where a farmer takes extra risk with potential extra reward.

In the case of a call option, for example, if the price of the underlying futures contract stays below the strike price, it will not pay the buyer to exercise the call. This could provide an attractive risk opportunity for a farmer who owns a commodity inventory. Suppose the farmer owns soybeans in storage and anticipates the soybean price will be stable over the next few weeks and, at worst, price will only fall slightly. The farmer decides to speculate on the price level by owning soybeans. With options the farmer could actually increase his earning potential by writing call options against his inventory. Suppose, for example, a farmer sells a $6.25 January soybean call option for a $.20 premium. The buyer would not find it profitable to exercise the option so long as January soybean futures were below $6.25. Thus, the maximum the farmer could earn would be $6.25 by selling soybeans (with

appropriate basis adjustment) and $.20 from writing the call option. If prices moved slightly above $6.25, say to $6.35, the farmers total return could still be above the return from selling soybeans at $6.25. In this case, the farmer as option writer would lose $.10 as the option were exercised but would have the $.20 premium to offset this loss. It is easy to see that as long as prices move above the striking price by less than the premium the farmer has a net gain equal to speculating on the inventory. If prices stay stable, the return is greater than holding the speculative inventory.

The writer of a covered call in essence limits the maximum price recieved but may have greater earnings than the cash market speculator if prices are stable. The only limit which the writer has on his losses is the premium recieved. Thus, the writer of covered call options would find the strategy profitable when prices were expected to move only slightly. This would provide gains from the writing of options as an added return to speculation. It is a risky alternative, but some farmers may find it useful.

Those who hold strictly to the options as "price insurance" view would not include the above discussion in a session on farmer uses of options. To exclude such a case could be interpreted as supporting the view that there are some uses of options which are "legitimate" and other uses of options which are "illegitimate". To those who classify options uses in these two categories, I am sure that the role of the Extension Service is seen as promoting the "legitimate" and warning of the hazards of the "illegitimate". I would argue that our role is to extend all that economic theory and research has to offer. Further, that if we want to realisticly anticipate how farmers will use options we will anticipate strategies which may appear to us to increase price risk as well as strategies which offer "price insurance". We need to be anticipating the broadest possible uses of these new marketing instruments.(3)

Options and Market Information

In the debate over the pilot program to trade agricultural options much of the emphasis has been on the availability of the institution as a trading vehicle. Emphasis is on the benefits to individual traders from the legalization of the option contract as a legitimate form of exchange (within the confines of the pilot program rules). While this emphasis may capture the bulk of the private benefit from this new form of trading it does not capture the public benefit potentially available from having an open public market in options contracts for agricultural commodities. Some reflection on the importance of public markets and, specificly, the public nature of futures trading will help point up the important informational benefits of an open competetive options market.

The value of open public markets which discover prices and relay that information to the public is widely under appreciated. In fact, if those markets are discovering prices which are not to our

liking, we may consider them with a degree of hostility. Such has often been the case for commodity futures markets. Such hostility was often from farmers as prices fell or consumers as prices rose.(4) In many respects, the amount of hostility shown to these markets is a direct result of the public nature of their trading. Their public nature makes them easy targets.

The public nature of trading at U.S. futures exchanges is one of the key economic aspects which distinguish it from other price discovery institutions. The open access to trading and the wide availablity of the results of trading mean that the current price of any of the goods traded on these markets is known. It is impossible to "pull the wool over the eyes" of any but the most uninformed trader on the price of corn, or soybeans, or wheat or cotton. In any newspaper from the major business daily to the village weekly you will find the results from trading in the futures markets. The wide distribution of these results is possible because one of the mandates for the organized futures markets in this country is that trading be through "open outcry". Further, the exchanges are charged with an active role in assuring trading results are distributed widely. These aspects combined with an agressive and technologically sophisticated business press assure wide distribution of prices. This wide distribution of the latest prices is one important step toward making these markets competetive. That push toward competetion affects both traders in the "pits" and those far removed from the actual trading action. Prices for related commodities react everywhere. In fact, some prices are lower and other prices are higher than they otherwise would be. If we believe in competation as a way of price determination, then these open public markets are an important catalyst to a competetive and, thus, an effective price discovery process.(5)

The pilot program in agricultural options trading offers some of these same advantages for the options contract(see Gardner). That is, since the program is one of exchange trading with the trading process and it's results open to all, many of the abuses of "private treaty" options trades may be avoided. Further, the results of the trading activity become important inputs for decision makers throughout the economy.

While it is true that relatively few farmers are direct participants in futures trading, futures prices are important parts of the information available to all farmers. They are important indicators of the overall level of prices as well as the relative value of commodities for immediate versus later delivery. They offer a measure of how local supply and demand conditions compare to national and international conditions through the cash-futures basis. They provide current market assessments of today's value of future crops. Likewise, option premiums offer an additional insight into the collective evaluation of market direction. To have the information that traders were willing to pay a premium of 15-3/8 cents for a January put option with a strike price of $6.25 per bushel gives the seller of soybeans and the buyer one more piece of information on the current "outlook" for soybean prices. When

evaluated with the premiums on other soybean options at alternative strike prices, the information revealed is a significant new dimension in available market information.

This new information may be as important to farmers and other market analysts as the opportunity for trading the option contract and gaining direct benefits. In fact, the general benefit to the public of this renewed trading in agricultural options will come in my view from these information and price discovery effects. In order for these benefits to materialize the markets will themselves have to be efficiently organized and operating at effective levels of liquidity. A major charge to all of us is to continue to assess the performance of these new markets in providing these indirect benefits. If these markets are effective parts of the price discovery process, farmers will find themselves using the information from these markets as they now use the spreads between futures delivery months and the cash-futures basis for alternative markets in making their marketing plans. A major thrust of our activity in the universities, the USDA, and in advisory firms will be helping farmers and others in the market learn to interpret this new information and use it effectively in developing marketing plans.

Access to Agricultural Options

One of the major criteria on which the pilot program for agricultural options will be judged will be commercial use. An important part of this evaluation will be the extent of farmer use. One of the major clouds hanging over the pilot program is the status of cash contracts written in association with options trading. Specificly, trading firms such as country and terminal grain dealers would like to be able to enter into contracts with farmers that resemble options. These activities generally anticipate an offsetting trade in exchange traded options. Thus, an elevator offering to acquire grain from farmers with a contract with the characteristics of a put option at a particular strike price would take an offsetting position in options on an organized exchange. If prices rise, the farmer's option would expire worthless and he would deliver the grain at the higher prevailing market price less the option premium. The grain dealer would have the income from the premium to offset his cost of the now worthless put. He could move the farmer's grain into the market and earn his normal handling margin. If price falls, the farmer exercises his option and recieves the strike price less the premium. The elevator sells the now more valuable put and has the income from the change in the premium to make up for the difference between what he pays the farmer and the current grain price. Again, he moves the grain into the market and earns his handling margin.

Such contracts(5) are currently not specificly recognized as part of the pilot program rules. To the extent that such contracts are found to be options on physical commodities, they appear to be

illegal under the limited pilot program. This puts firms using such contracts in jeopardy from specific enforcement by the CFTC and at risk of the contracts being unenforceable in civil actions. I think that the availability of such cash market
options is critical to the long run viability of exchange-traded options.

In such a setting the primary feature in the activity of the cash merchant is one of acting as an "intermediary" giving the farmer indirect access to the options market. The cash merchant may have increased handling volume as a primary incentive for this activity as it may allow operation at lower average cost. The merchant may also extract a direct or an indirect fee for the service provided through higher premiums charged the farmer, through lower strike price offers or through service fees.

Cash merchants have long played this role in commodity futures markets; they offer cash forward contracts, delayed price contracts and other instruments which have pricing characteristics similar to direct actions in futures markets. Farmers are much more frequent users of these cash market instruments than they are direct users of futures. This is also true for a large number of smaller marketing firms. While the decison to use a particular trading strategy is always complex, some general factors appear to come into play. These are discussed below in no particular order of importance.

Contract Size - The size of most commodity futures contracts is at a scale which does not fit well with production levels on many farms. A 5000 bu. soybean contract represents about 143 acres of soybeans at 35 bu. per acre. A 40,000 pound cattle contract represents about 38 steers at 1050 pounds. Even the so-called "mini" contracts at the MidAmerica Commodities Exchange are not small enough for many farmers. The issue is usually that the farmer would like to be able to spread marketings over several decisions. Contract sizes result in each committement being too large a proportion of production. A key feature of cash market contracts is the ability to suit them to the farmers individual contract needs in terms of contract size. These smaller contracts are then "bundled" into offsetting committments in futures markets.

Institutional Complexity and Familiarity - While todays farmers are often very sophisticated, they are likely to be more at ease with those institutions which they know and understand. The cash contract with a local merchant may be legally complex but the parties usually know each other. There is a level of familiarity and trust that is often not possible in the more impersonal dealings of direct futures or options market participation. In addition, the direct participation in futures or options markets involves the broker as an additional party in the transaction which makes the transaction inherently more complex.

Language - The language of the marketplace also poses a barrier to direct participation. Futures traders and, in my view, especially options traders, speak a highly codified language that facilitates

communication among them. This language also becomes part of the vocabulary of commodity brokers. It is a barrier to those who do not speak that language. The cash merchant plays the role of the interpreter and makes the same economic actions accessible without the farmer having to learn the traders language.

Training and Experience - Perhaps several of the above can be summed up by indicating that the direct use of either options or futures markets requires more training than indirect participation. That training teaches the potential trader the key concepts which allow the abstractions of an option market, a futures market and a cash market to be effectively put into marketing use. Not every farmer wants the skills that allow for effective direct trading. In addition, not every farmer has the supporting network of trained legal, financial and personal counselors who understand direct trading in these markets well enough to guide the farmer wisely. The exchanges, trading firms, the farm press, the universities, the Extension Service and other eductional institutions are providing large programs to educate potential options traders and their support personnel. While these programs will equip many to be effective traders they will likely result in many more who would be knowledgeable indirect users of these markets.

The conclusion from the above discussion is that cash contracts can provide substantial benefits in providing access to the economic characteristics of options. The absence of these cash market alternatives is a substantial barrier to farmer participation in the pilot options program. It is my view that unless farmers find readily available cash market contracts in the form of options very few will participate in this pilot program. If my expectation is correct, then what could be a valuable institution may be judged incorrectly because of the lack of farmer participation. Farmers may find options contracts a desirable way to accomplish their objective but find the barriers to direct participation too high. A secondary threat to the options experiment of the restriction on intermediaries in creating cash contracts is the reduction in option market liquidity that is implied when some people are unable to trade indirectly.

The lack of farmer participation may reflect not only the issues raised above but the economic institutions available as alternatives to the options market. In the final section I turn to the issue of options as compared to other market alternatives including government price support programs.

Farmer Marketing Decisions and Alternative Marketing Institutions

The availability of a new marketing institution such as options must be considered in the context of other alternatives for dealing with price risk. The focus of the discussions concerning the lifting of the ban on options trading was squarely on the role these contracts could play as complements to government price support programs.

Gardner provides an excellent outline of the possibilities. In essence, the argument looks at existing price support loan programs which use established "loan rates" and non-recourse government loans as a form of put option. If prices are low, participating farmers turn their commodity over to the government and collect the loan rate (strike price). If prices are high, farmers pay off the loans and sell the commodity in the open markets. The "premium" paid by farmers is measured by the production controls or other provisions of the program they must agree too. Gardner argued that with an effectively functioning options market the government could offer a lower level of price support and allow farmers to purchase added "price insurance" through organized option trading. This would permit farmers to assure the same level of price protection with a very different allocation of the costs of that protection between farmers and the government.

The level of price support available through government programs may be a direct deterent to the development of an effective options market. If the government offers price protection at a very low cost to the producer, that will deter producers from options trading and other forms of trading that allow them to trade out of downside price risk (see Paul for a general discussion of competetion among marketing institutions).

This competetion between government programs and options markets is of particular concern in the current market environment. Among the newly available options contracts, the three wheat contracts and the cotton contract all are likely to find the government program a substantial competitor. All of these markets have sufficiently large supplies that it appears that prices will be near the respective loan rates in the near future. (Other papers at this conference may give a more focused analysis of each of the price situations.) In this environment the demand for "price insurance" at prices below current market levels would appear very limited. This situation could threaten the short run liquidity in these options markets. This could result in another source of wrong judgement about the options market as a pricing institution. The market could be in a trial period at the "wrong" time. Futures markets again provide an apt illustration. Trading volumes in particular futures markets have always responded to the degree of price volatility in that sector of the economy. Futures trading activity is brisk when the degree of price volatility is high. Both as a hedging institution and a price discovery institution futures assume a greater importance when economic conditions bring volatile prices. When prices are not very volatile, as happens when excess supplies are available over a number of years, futures markets recede in importance relative to other institutions.

The point here is that we need to recognize that many farmers may find existing government programs a more attractive "price insurance" device than options trading either direct or indirect. The relative attractiveness of these programs may be altered by the terms of the 1985 farm bill. I am sure that some will raise the availability of options trading as a mechanism which could reduce

the impact of reduced loan rates. I am equally sure that there will be strong forces attempting to keep loan rates at current levels. I will not forecast the outcome of the debate. Suffice it to say that in evaluating the pilot program for options trading the future of alternative government programs and the availability of other marketing institutions must be taken into account. If our future in agricultural markets looks more like the mid 1970's than the early 1980's we may find options trading more valuable in the future than it appears today. Perhaps the cattle and soybean contracts will provide a different sort of evidence.

Conclusion

I have tried to outline four concerns in assesing the outlook for agricultural options in producer marketing management. First we need to look beyond the buying of options as a form of "price insurance" to get a picture of the many possible marketing uses of options by farmers. Second, the information generated from option trading may be as significant in impacting farmer marketing as the availability of tradeable option contracts. Third, the limits on the development of cash market option contracts will limit access to the pilot program and may result in lower options market liquidity. Finally, the current market environment when combined with existing price support levels reduces the interest in institutions such as options contracts but that such institutions may have an important role with changes in government programs or with changing economic conditions. I do not claim that these are the only issues that should concern us in the outlook for the trading of agricultural options, but I do believe they are among the most important.

All of these concerns offer challenges to those of us trying to help farmers assess this new marketing institution. On balance, I think the pilot program will offer excellent opportunities for those with the inclination and interest in developing their marketing management program to add a new facet. That does not guarantee higher prices or higher incomes. It does mean that there is one more place to look for the best marketing strategy to fit the particular situation.

FOOTNOTES

(1) The views expressed in this paper are those of the author. They do not represent positions of the University of Wisconsin, the University of Minnesota or the Cooperative Extension Service, USDA.

(2) There are many excellent publications available on applications of agriucltural options in marketing management. The sources include the commodity exchanges, the Cooperative Extension Service, and Agricultural Economics departments at most Land Grant Universities. Those interested in teaching about options will be interested in the teaching guides produced under a USDA Extension Service special project. Information on these guides is available from John C. McKissick, Extension Economist, University of Georgia, Athens, Georgia.

(3) An area of special importance here is the assessment of the way in which options premiums move in relation to cash price movements in local markets. This is a new form of basis analysis. We have helped farmers understand cash-futures basis in the context of hedging. An understanding of options basis will be essential to evaluating options strategies. It is an area where we in the universities, at the USDA, and in private firms have much to do.

(4) I recognize that farmers and consumers may be hostile toward these institutions for reasons other than there role as the "bearer of bad news". As the "bearer of bad news", these institutions take a fair amount of abuse even when they are performing effectively in other dimensions.

(5) Public trading is not the only ingredient making futures markets an effective part of the price discovery process. The standardization of contracts, few barriers to entry, low transactions costs, a well functioning communication system, an effective link to large volume cash markets, and an informed group of traders all add to the effectiveness of any specific market.

(6) There are many combinations of alternative cash contracts and exchange traded options and futures positions which have similar effects. The primary consideration here is that the cash market firm is using the contract primarily to provide a service to other traders. The firm expects to earn a handling charge either directly or indirectly from this service.

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INTRODUCTION

The Federal government first began measuring poverty in the 1960s when the continued existence of Americans living at the edge of subsistence seemed out of congruence with the affluence of so many in the U.S. Undertaking a "War on Poverty" required finding out who was poor and, of course, why they were poor. This knowledge, it was hoped, would lead to new and better programs for alleviating poverty.

This paper attempts both to explain how poverty is currently measured in the United States and to present some perplexing measurement issues. I first discuss the history of and current measurement procedures for the Bureau of the Census poverty thresholds. Then I mention the Office of Management and Budget poverty guidelines that serve as an operational definition of the thresholds for many federal programs. Finally, I present some of the more important and perplexing issues in measuring poverty.

HISTORY

Mollie Orshansky, then at the Social Security Administration, suggested in the early 1960s that a reasonable measure of a poverty-level income would be that income sufficient to purchase a minimally adequate amount of goods and services. The data necessary to define and price a full "market basket" of goods and services did not then (and do not now) exist. Ms. Orshansky observed, however, that the data from the Department of Agriculture's (USDA) 1955 Household Food Consumption Survey showed that the average family of three or more persons spent approximately one-third of its after-tax income for food. She then multiplied the estimated cost of the USDA's 1961 economy food plan (a minimal food basket meeting then currently recommended dietary allowances) by three. (For two-person families and unrelated individuals, the cost of the food plan was multiplied by slightly more than three in order to take account of the relatively larger fixed expenses of smaller households.) These thresholds varied by the size of the family, the age and sex of the family head (householder), and whether it was a farm or nonfarm family (farm family thresholds were set at 70% of the nonfarm thresholds). In effect, these thresholds defined as poor any family (or individual) whose after-tax cash income was not sufficient to purchase a minimally adequate diet, assuming one-third of income was spent on food.

CENSUS POVERTY THRESHOLDS

The basic concept of measuring poverty has remained the same since the Orshansky thresholds were adopted in the mid-1960s, though various minor technical revisions have been made. At first, the thresholds were revised annually to reflect changes in the cost of the economy food plan. Since 1969, however, when the thresholds were officially recognized by the Office of Management and Budget (OMB), the thresholds have been adjusted for changes in the overall Consumer Price Index (CPI). (The farm/nonfarm differential was changed to 85% at that time as well.) The most recent revisions were made in 1980. The farm/nonfarm differential was abolished as were separate thresholds for female-headed families, and thresholds were established for families of eight and of nine or more persons (formerly, the thresholds were defined only up to seven or more persons). Thus there are currently 48 basic thresholds (124 prior to 1981) that are weighted by estimates reflecting the population distribution of poor people among the categories to give the 13 thresholds usually reported—one each for unrelated individuals and family sizes two through nine or more, with four additional thresholds for elderly and nonelderly individuals and elderly-headed and nonelderly-headed two-person families. Table 1 presents the weighted average poverty thresholds in 1983 and shows that the poverty threshold for a family of four is currently $10,178. For comparison, the weighted average poverty threshold for a nonfarm family of four in 1968 was $3,553.

Five rules followed by the Census Bureau have an important effect on the actual count of the number of people in poverty.

(1) Poverty status is determined for unrelated individuals only if they are 15 or older.
(2) The count is only of poor families and individuals, not of poor households. Multi-person households are counted as a single unit only if the persons are all related.
(3) Annual income is used so no month-to-month profile of poverty is available.
(4) Before-tax cash income, not post-tax disposable income, is used in judging whether a family is poor.
(5) Noncash benefits are not counted in determining poverty status.

These rules work do not all work in the same direction—some increase and some decrease the count of poor persons—but all affect the reported demographic profile of the poverty population.

OMB POVERTY GUIDELINES

A number of federally supported programs to assist low-income persons by law or regulation use a variant of the Census Bureau poverty thresholds in determining income eligibility for benefits. This alternative, known as the OMB poverty guidelines, is a simplified and rounded-off version of the thresholds discussed above. The guidelines were issued by the Office of Economic Opportunity and its successor agency, the Community Services Administration, from 1965 to 1981 and have been published by the Department of Health and Human Services since 1982. Separate guidelines are established for Alaska and Hawaii. These OMB guidelines are made avail-

able in February or March of a calendar year (the Census thresholds are not published until August). Although the OMB guidelines reflect inflation only through the previous year (as do the Census thresholds), they are used as guidance for the upcoming year (the thresholds are used only to determine poverty for the previous year).

The OMB guidelines (or adaptations of them) are used by a number of programs including

Department of Health and Human Services
- Community Services Block Grant
- Low-Income Home Energy Assistance Block Grant
- Head Start

Department of Agriculture
- Food Stamps
- National School Lunch Program (free and reduced-price lunches)
- Special Supplemental Food Program for Women, Infants, and Children (WIC)

Department of Labor
- Job Corps
- Migrant and Seasonal Farmworker Program

Department of Education
- Upward Bound

The OMB guidelines are used in a number of different ways by these programs. For example, the National School Lunch Program requires that free meals be made available to children from families with incomes below 130% of the guidelines, and reduced-price meals to children from families with incomes between 130% and 185% of the guidelines. The Food Stamp program counts monthly, gross, pretax income against a monthly version of 130% of the guidelines for nonelderly, nondisabled households (a different set of rules apply to elderly or disabled households).

CURRENT AND PAST POVERTY

Table 2, adapted from the latest annual Census publication on poverty, characterizes the population below the poverty level in 1983. Poverty statistics published by the Bureau are based on the Current Population Survey (CPS) taken in March of each year. The number of persons below the poverty level in 1983 was 35.3 million, a statistically significant increase of nearly 900 thousand persons from 1982. Black and Spanish origin families have substantially higher poverty rates than whites, and persons in families with a female householder (no husband present) have a much higher poverty rate than those in other family types.

Figure 1 presents a picture of how the poverty rate has changed over time. The earliest measurement placed the poverty rate in 1959 at 22.4%. Due to economic growth and the expansion of income transfer programs, the poverty rate fell to an historic low of 11.1% in 1973, remaining at or near that level through 1979. The poverty rate has risen since then to 15.2% in 1983.

ISSUES IN MEASURING POVERTY

Lest the reader believe that all is well in the realm of poverty measurement, I would like to use the rest of my space to alert you to a number of issues debated by both technicians and politicians relevant to measuring poverty. I first examine the role of the poverty measure as a social indicator. I then discuss how demographic changes might affect interpretation of the measure and how inflation and price differentials create problems in adjusting the thresholds. Finally, I touch on the issues of taxes, the income accounting period, noncash benefits, and the importance of understanding the overall income distribution.

Poverty as a social indicator. How well is poverty defined by the measure now in use? The original definition of the poverty thresholds was based on an estimate of minimum subsistence, making the official poverty levels in some sense an absolute (as opposed to a relative) measure of poverty. But, there were problems in defining poverty as an absolute standard. Even in its original incarnation, no attempt was made to measure the subsistence levels of nonfood items in a poor family's budget because the data did not (and do not) exist. It was argued that since the average three-person family spent approximately one-third of its income (in 1955) on food and we could calculate the cost of a minimal diet, we could approximate an absolute poverty level by multiplying that cost by three. Because real incomes have risen tremendously since the mid-1950s, current families spend approximately one-fifth of their income for food. Thus, advocates of the poverty thresholds as an absolute measure have argued that the cost of the economy (now thrifty) food plan should be multiplied by approximately five.

Such a position, it seems to me, ignores the basic purpose of the poverty rate. In my opinion, that basic purpose is to use the poverty as a social indicator—a measure of how well we as a society are doing to help the less fortunate members of our society. In that sense, the poverty line has evolved into a kind of relative measure, that is a measure of how well those at the lower end of the income distribution are doing (or at least how many of them there are). In that role, its chief advantage is that it has a consistent definition (at least since 1969) and uses a commonly accepted method for accounting for inflation. A true relative measure might be something like setting the poverty threshold at a fixed proportion of, say, the median income for each family size, and calculating the proportion of families falling below those thresholds. (The current thresholds are approximately one-third to two-fifths of median income, having fallen from roughly one-half in 1959.) Unfortunately, choosing a relative measure would likely lead to the truism that "the poor will always be with us", though that is not necessarily strictly true under a percentage-of-median-income definition.

Demographic changes. Yet the overall poverty rate has shortcomings as a social indicator. Demographic changes in the population, specifically the increase in female-headed families (no husband present) and in unrelated individuals, tend to lead to increases in the overall poverty rate since these two groups have above average poverty rates. That is, even if there had been no change in the poverty rates of any individual

demographic group, the poverty rate would have risen as these groups became a larger proportion of the population. It is only by going behind the concept of poverty measurement to looking at demographic change directly that we can gain an understanding of the social forces at work.

Inflation and price differentials. Inflation and, more broadly, prices, create problems in measuring poverty. For example, the choice of inflation index with which to adjust the thresholds from year-to-year is not without controversy. At first, changes in the price of food were used to adjust the cost of the minimal diet, with the multiplier remaining the same (at three). But changes in food prices change the food consumption behavior of families, leading OMB to adopt the CPI as the basis for adjusting the thresholds. In any case, should the appropriate index be one for items purchased by poor people rather than by all persons? (Some evidence shows that a price index so defined would probably have risen slightly less than the CPI actually has.) Should one adjust the poverty thresholds for regional cost-of-living differentials? (The current Census thresholds make no distinction between a family living in New York City and one living in rural Mississippi, though the OMB guidelines do take special note of Alaska and Hawaii.) Although these alternatives may seem like reasonable ideas, the data do not exist to implement either of them.

Taxes. Poverty rates are calculated from sample survey data (the CPS). Not only is there underreporting of income by survey respondents (not limited to low-income respondents) and imputation of missing data, but the tax liability of the families in the sample is not asked. This leads to the anomaly of calculating poverty on a pretax basis but using a definition originally defined on a posttax basis. Simulating tax liability is an option but would lend an additional element of arbitrariness to the calculation.

Accounting period. Monthly data on income are just now becoming available from the Survey of Income and Program Participation making it possible to define a poverty rate for an accounting period of less than one year. Because of substantial month-to-month variations in income flows and expenditures and the ability of families and individuals to save, it may not make any sense to define poverty on a month-to-month basis.

Noncash benefits. The most important and perhaps most controversial issue is what to do about noncash benefits. When the thresholds were originally defined, practically the only source of noncash benefits of any consequence was the noncash income of farmers. This was taken into account by establishing separate thresholds for farm and nonfarm families. As the number of farmers has fallen and as persons on farms have come to derive larger proportions of their total income from nonfarming employment, the importance of noncash income to farmers has fallen as well, and that distinction was eliminated in 1980. On the other hand, there has been a tremendous growth in both government and private sector noncash transfers, for example, Medicare, Medicaid, food stamps, nutrition assistance, housing assistance, and employer-provided fringe benefits (mainly health insurance and pension contributions). How to value these transfers and whether to change the definition of poverty to be consistent

with the changed definition of income has been the focus of a great deal of study and will be the focus of the presentation to follow mine.

Income distribution. Finally, the number of persons in poverty is just one aspect of the overall distribution of economic well-being in this country. It is apparent that there is a strong trend towards a more unequal distribution of income over the past decade. In other words, even though the American "pie" has become bigger, the share of the lowest portion of the income distribution has fallen while the share of those at the upper end has risen. Serious students of U.S. economic well-being would do well to investigate all aspects of income distribution, not just poverty.

OUTLOOK

What is the outlook for the future? In terms of poverty itself, the rate will undoubtedly be lower in 1984 than it was in 1983. How much lower is a matter for speculation, but one competent researcher has suggested that based on his model, and using current Congressional Budget Office economic projections, the poverty rate will fall to 13.6% in 1986 (from 15.2% in 1983). In other words, economic growth will help, but the low poverty rates of the mid-1970s are not in sight. In terms of poverty measurement, it is likely, indeed inevitable, that discussion will focus on the appropriate treatment of noncash benefits in determining poverty.

NOTE: The author would like to thank Gordon Fisher and Reuben Snipper for their helpful comments and suggestions. The views expressed in this paper are the author's own and do not represent those of the Departments of Health and Human Services or Agriculture.

REFERENCE: Much of the material in this paper was drawn from U. S. House of Representatives, Committee on Ways and Means, Subcommittees on Oversight and on Public Assistance and Unemployment Compensation, Background Material on Poverty, Committee Print 98-15, October 17, 1983.

TABLE 1. Weighted Average Poverty Thresholds in 1983.

Size of family unit	Threshold
One person (unrelated individual)..	$5,061
15 to 64 years.....	5,180
65 years and over.....	4,775
Two persons.....	6,483
Householder 15 to 64 years.....	6,697
Householder 65 years and over....	6,023
Three persons.....	7,938
Four persons.....	10,178
Five persons.....	12,049
Six persons.....	13,630
Seven persons.....	15,500
Eight persons.....	17,170
Nine persons or more.....	20,310

TABLE 2. Persons, Families, and Unrelated Individuals Below the Poverty Level, 1983

Characteristic	Poverty Rate	Persons (millions)
All persons.....	15.2%	35.3
White.....	12.1	24.0
Black.....	35.7	9.7
Spanish Origin (of any race).....	28.4	4.2
In metropolitan areas.....	13.8	21.8
Outside metropolitan areas.....	18.3	13.5
All families.....	12.3	7.6
Married-couple families.....	7.6	3.8
Male householder, no wife present.....	13.0	0.3
Female householder, no husband present...	36.0	3.6
All unrelated individuals.....	23.4	6.8

SOURCE for Tables 1 and 2: U.S. Bureau of the Census, Series P-60, No. 145, Money Income and Poverty Status of Families and Persons in the United States: 1983 (Advance Data from the March 1984 Current Population Survey), Washington, D.C.: U. S. Government Printing Office, 1984.

FIGURE 1

Persons Below Poverty Line, 1959–1983



IN-KIND INCOME: EFFECT ON POVERTY

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Under the official definition, poverty status is determined by comparing the annual money income of a family with a predetermined poverty threshold level. In 1983, for example, the poverty threshold for a family of four was $10,178. During the past few years, we have heard arguments that poverty status should depend not only on the amount of money income received but on the receipt of noncash benefits such as food stamps and medical assistance.

In September 1980, Congress directed the Secretary of Commerce to include, in survey reports, estimates of the effect of in-kind benefits on the number of families and individuals below the poverty level. The Census Bureau responded to this directive by asking Dr. Timothy Smeeding to develop techniques for assigning dollar values to in-kind benefits. The project was made possible by the fact that the March supplement to the Current Population Survey had been modified in 1980 to include questions about the receipt of food stamps, school lunches, medicare, medicaid, and public and subsidized housing.

The results of Smeeding's work were published in March 1982 in Technical Paper 50. That report showed what the poverty rate would be for various groups within the population if income were redefined to include the value of benefits from the government programs mentioned above. The results were labeled "experimental" and a careful reading of the description of the methods used to value the benefits should convince users of the appropriateness of that term. Technical Paper 50 presented estimates for 1979; Technical Papers 51 and 52 presented figures for 1980 through 1983.

Today, I want to review the circumstances that led to the preparation of these estimates and describe the methods used to obtain them. The release of these reports has raised concerns about reestimating the number of persons in poverty by changing the definition of income and I would like, also, to speak about some of these concerns.

A good starting point for this discussion is a brief and simplified description of the official definition of poverty.

The definition of poverty that was developed by Mollie Orshansky and became our official definition was based on two key elements. The first key element was a Department of Agriculture food plan that was used to define the minimum income needed to meet food requirements. There were no similar plans available for nonfood items, however, so a procedure had to be developed to define the minimum income needed to meet nonfood requirements. The procedure chosen was to multiply the food plan by a

factor so that the resulting dollar value represented the amount needed to meet both food and nonfood requirements. The use of a multiplier became the second key element. The value of the multiplier was set equal to 3, the reciprocal of the proportion of income spent by all families on food in the 1955 Food Consumption Survey. The multiplier approach, and the use of all families as the reference group had this implication: the proportion of income spent on food should be the same for low-income families as it was for all families.

This definition of poverty together with the income data collected in the annual March supplement to the Current Population Survey allowed the Census Bureau to begin publishing in 1969 official estimates of the number and characteristics of persons in poverty. The Bureau continues to publish regular reports and estimates are available for the years 1959 through 1983.

I want to note here that the official poverty definition is relative in the sense that it based on a necessarily subjective food plan and on certain expenditure patterns. It is absolute in the sense that the levels do not change over time except for price adjustments. Because the poverty threshold is fixed in terms of real dollars, the relative income of families at the poverty level declines as real average family income increases. In 1959, the poverty threshold for a family of four was about one-half of median family income; in 1983 it was equal to about one-third.

During the 1960's and 1970's, we witnessed the development of large new noncash benefit programs that led to concerns about the adequacy of the poverty definition and ultimately to the Congressional directive referred to earlier. Among the programs initiated during this period were food stamps in 1964, medicare and medicaid in 1965 and a major new housing assistance program in 1974 (Section 8 rental assistance). By 1983, these programs accounted for a large proportion of the assistance going to lower-income families. In 1983, the amount of means-tested cash assistance was approximately 28 billion compared to outlays of 11 billion under the food stamp program, 32 billion under the medicaid program and 9 billion under housing assistance programs. It should be noted however, that noncash benefits to the nonpoor have also increased over the past two decades. For example, in 1983, employer contributions for health and pension plans amounted to 171 billion and employers contributed another 153 billion for Federal and state social insurance programs.

We turn now to the details of the methods used to value noncash benefits. The task of preparing estimates is fairly straightforward in the case of food stamps, but very difficult for other types of benefits. The problem is made worse by the limited amount of information on noncash benefits that is collected in the Current Population Survey. For example, except for food stamps, no information is collected on duration of recipiency. The valuation approaches make the assumption that the benefit was received during the entire year.

Smeeding used three approaches to the valuation of noncash benefits; the market value approach, the cash equivalence approach, and the poverty budget share approach.

The market value approach attempts to value the good or service at the price the good or service would command on the open market. In the case of food stamps, the approach is straightforward. They are counted at their face value. The valuation of other benefits is less straightforward. Benefits from school lunches are valued according to Department of Agriculture data on subsidies per meal for regular price, reduced price, and free school lunches. The Current Population Survey questionnaire does not distinguish between free and reduced price lunches so the assumption is made that children below the 125 percent of poverty level receive free lunches.

The market value of medicare and medicaid coverage is estimated by calculating program expenditures per enrollee or beneficiary. In the case of medicare, data are obtained for each state on persons covered because of age, persons covered because of disability, benefits paid on behalf of the aged, and benefits paid on behalf of the disabled. The estimated money value of being covered by medicare, then, depends on the state of residence and the person's risk class-whether they are covered because of age or because of disability. In 1983, the estimated money value of being covered by medicare ranged from $1,016 for a person 65 or over living in Utah to $4,051 for a disabled person living in the District of Columbia. In the case of medicaid, the money value of coverage depends on the state of residence and which one of four risk classes the person falls into: 65 or over; disabled; 21 to 64, not disabled; and under 21, not disabled. The valuation of medicaid also depends on whether expenditures for persons in institutions are included when the expenditure per beneficiary figures are calculated. The inclusion of expenditures for persons in institutions increases the estimated dollar value of medicaid coverage substantially for the aged and disabled. In 1983, the estimated dollar value of being covered by medicaid ranged from $166 for a nondisabled person under 21 in South Carolina (institutional expenditures excluded) to $7,884 for an aged person in New York (institutional expenditures included) to $10,243 for a disabled person in Minnesota (institutional expenditures included).

Obviously, the values assigned under the market value approach to disabled persons and to persons 65 and over who are covered by medicare and/or medicaid are very substantial. Because the 1983 poverty threshold was only $4,775 for a single person 65 or over and only $6,023 for a 2-person family with a householder 65 or over, the use of the market value approach reduces the poverty rate among persons 65 and over from 14.1 percent to 3.3 percent. In fact in some states, it would be nearly impossible for a 65 year old to be classified as in poverty under the market value approach that includes institutional expenditures.

The method used to estimate the dollar value of housing assistance is especially complex. Ideally, one would like to know, for each public or subsidized housing unit, the actual rent paid and the rent that could be

obtained for the unit on the open market. The difference would then be the dollar value of the housing subsidy. Unfortunately, no data on amount of rent paid are collected in the Current Population Survey. Such data are collected in the Annual Housing Survey, but of course that survey does not collect data on the amount of rent that subsidized units could command on the open market. The methodology used to assign a dollar value to housing assistance involves the following steps (1) for each public or subsidized unit in the Annual Housing Survey, find a nonsubsidized unit that is similar in terms of certain characteristics of the unit and the household, (2) compare the subsidized rent with the nonsubsidized rent and consider the difference to be the dollar value of the housing assistance, (3) use this information to assign the appropriate subsidy to each Current Population Survey household residing in a public or subsidized housing unit according to the type, size, and income of the Current Population Survey household.

The next valuation approach to be described in the cash equivalent approach. The cash equivalent of a benefit is the amount at which the recipient would be indifferent as to whether he or she received cash or the benefit. The basic approach is to try to measure the normal expenditure an unsubsidized family of a given type would make on the good or service in question. The normal expenditure level is then compared to the market value of the benefit. If the normal expenditure level exceeds the market value, the cash equivalent value is set equal to the market value. If the normal expenditure level is less than the market value, then the cash equivalent value is set equal to the normal expenditure level.

In practice, it is often difficult to apply the cash equivalent technique. Estimates of normal expenditure levels on food were made using recent data from the Consumer Expenditure Survey and were used in determining the cash equivalent value of food stamps. In the case of school lunches, however, the cash equivalent value was simply set equal to the market value.

The implementation of the cash equivalent approach in the case of housing assistance is difficult and complex. Recall that a statistical matching technique was required to transfer estimates of actual housing costs and the amount of housing subsidy from the source file, the Annual Housing Survey, to the file from the Current Population Survey. A similar procedure is used to transfer estimates of normal housing expenditures from households in the Annual Housing Survey to households in the Current Population Survey. To summarize, we need to know, for each CPS household living in public or subsidized housing, three items of information; actual housing costs, the value of their housing subsidy, and normal housing costs of families with similar characteristics. None of these data items are available from the CPS and only two are available from the Annual Housing Survey. The estimation procedure, then, involves the creation of an estimate of the value of housing subsidies and the statistical transfer of three critical data items from one survey to another. Once these transfers are made, the valuation of the housing subsidy for a given household under the cash equivalent approach depends on a comparison of normal housing expenditures for households of this type

with the sum of actual costs plus market subsidy. If normal expenditures are less than this sum, then the cash equivalent approach values the subsidy at an amount lower than the estimated market value of the subsidy.

The determination of the cash equivalent value of medicaid and medicare is made difficult by the fact that most U.S. households have health plans that are subsidized by either government or an employer. As a result, it is difficult to measure the normal expenditures of unsubsidized households. The procedure used was to base estimates of normal expenditure levels on data from the 1972-73 Consumer Expenditure Survey and ignore the fact that, because of an inability to measure government and employer subsidies, the normal expenditure estimates were biased downward.

The final valuation approach, the poverty budget share approach is similar to the cash equivalent approach except that the "normal expenditure level" is replaced by "average amount spent by households at the poverty level." If the average amount spent by households at the poverty level is more than the market value of the benefit, then the benefit will be assigned its market value. If the average amount spent by poverty households is less than the market value, then the benefit will be assigned a value equal to the average expenditure of poverty households.

There are two general types of issues that should be discussed concerning the Census Bureau's effort to value noncash benefits for the purpose of reestimating the number of persons in poverty. The first general issue concerns methodology and the second concerns the appropriateness of changing the income measure while leaving the poverty threshold unchanged.

Under the general issue of methodology, we can note the following concerns. First, it seems unreasonable to value the benefits of medicare and/or medicaid at such a level as to practically eliminate poverty for persons 65 and over. Most users would reject this as out of touch with reality. The poverty level is intended to measure the resources needed to meet basic food and nonfood requirements. Assigning a person $6,000 in income because he or she is covered by medicare and medicaid does not help that person meet his or her requirements for food, shelter, clothing, transportation, and personal care. Second, there would appear to be a problem with valuing school lunches at the full amount of the subsidy. If it could be measured, the normal expenditure level on lunches for many families is probably well below the cost of government subsidized school lunches. In fact, if school meals are designed to be an integral part of the educational process, there is as much reason to try to value education as to value school meals. Third, the method used to value benefits from public or subsidized housing is complex and tenuous. The assignment of a value involves a good many statistical steps, but rests basically on the assumption that it is possible in the Annual Housing Survey to find pairs of housing units that are essentially identical except one is subsidized and the other is not. The problem with making this assumption is underlined by the fact that the Census Bureau has essentially given up on the problem of measuring housing quality.

The second general issue has to do with the relationship between the poverty thresholds and the income definition used to determine poverty status. The position taken on this issue would seem to be a reflection of how one interprets the meaning of today's poverty thresholds. One possible interpretation is that the thresholds came from the mountain top and defined the resources needed to meet minimum food and nonfood requirements if not for all time then at least for our time. A second interpretation is that the size of the multiplier was based on money relationships, and the counting of noncash benefits is inappropriate unless we reestimate the multiplier using data on both cash and noncash income. At this point it is not clear for which reference period the multiplier should be reestimated. An effort could be made to go back to the original time period, or the multiplier could be reestimated using the most recent data available.

If nothing else, I hope that this paper will convince users that "experimental" is a proper term to describe the methods that we have used to value noncash benefits. Our future path is not yet clear. The Census Bureau will continue to address the technical problems of valuing in-kind benefits and it seems likely that the Bureau will make full use of outside experts in this area. The Office of Management and Budget is responsible for statistical standards and therefore has overall responsibility for the definition of poverty. It remains to be seen whether the poverty definition itself will be the subject of a broad-ranging review. There are, I believe, good reasons for recommending that an intensive and objective review be conducted.

MEDIAN FAMILY INCOME and Poverty Thresholds for Four-Person Families: 1959 to 1985 (In current dollars)

Year	Median family income	Poverty threshold	Poverty threshold as a percent of median family income
1959	$6,070	$2,973	49.0%
1960	6,295	3,022	48.0
1961	6,437	3,054	47.4
1962	6,756	3,089	45.7
1963	7,138	3,128	43.8
1964	7,488	3,169	42.3
1965	7,800	3,223	41.3
1966	8,341	3,317	39.8
1967	8,994	3,410	37.9
1968	9,834	3,553	36.1
1969	10,623	3,743	35.2
1970	11,167	3,968	35.5
1971	11,626	4,137	35.6
1972	12,808	4,275	33.4
1973	13,710	4,540	33.1
1974	14,969	5,038	33.7
1975	15,848	5,500	34.7
1976	17,315	5,815	33.6
1977	18,723	6,191	33.1
1978	20,428	6,662	32.6
1979	22,579	7,412	32.8
1980	24,332	8,414	34.6
1981	26,274	9,287	35.3
1982	27,619	9,862	35.7
1983	29,184	10,178	34.9

Source: United States Bureau of the Census

11/7/84

Selected Sources of Noncash Income

(In billions of 1983 dollars.)

Government programs		1959	1983
1.	Needy families program (food)	0.4	-
2.	School lunch program	0.7	3.2
3.	Food stamps	*	11.2
4.	WIC	*	0.9
5.	Medicare	*	55.6
6.	Medicaid	*	32.2[1]
7.	VA medical care	2.9	7.8
8.	Hospital care provided by public assistance or charity	8.0	-
9.	Housing assistance for low-income persons	3.3[2]	9.3[2]
10.	Energy assistance for low-income persons	*	1.8
Other			
1.	Employer contribution for private health and pension plans	35.2	170.6
2.	Employer contributions for Federal and state social insurance programs	34.2	153.1
3.	Return on equity in own home	13.5[3]	48.8[3]
4.	Tax deductions for business meals and entertainment	4/	4/

1/ Includes $5.7 billion for persons in institutions.

2/ Includes capital expenditures.

3/ Obtained by calculating total equity in owner-occupied residence in 1962 and 1979 and applying a 3 percent rate of return.

4/ Data could not be furnished by Internal Revenue Service.

THE NEW FARM BILL:
VIEWPOINT FROM THE CONGRESS

OUTLOOK '85

Senator Dan Quayle
Chairman, Subcommittee on Employment and Productivity
Senate Committee on Labor and Human Resources

Annual Agricultural Outlook Conference
Washington, DC, Session 10
December 4, 1984

It is a great pleasure to address this broad cross section of the American agricultural community today and continue the discussion on changes needed in U.S. farm policy. I think that the earlier comment about reducing the federal deficit is probably a pretty good starting point. You're going to hear that, as they say, until the cows come home, or at least from now until July or August. I can tell you that the political process in Washington, particularly the one on Capitol Hill, will be completely absorbed with the budget deficit as a whole and also the agricultural sector and its role in that deficit. You only have to look on the front page of the Washington Post today--and this will be repeated in other major newspapers around the country--to see that it says, "Reagan Puts Farm Aid on List of Cuts," to tell you that everything is going to be included in the deficit reduction effort. A lot of people have asked me since the election: "Well, Dan Quayle, what do you think the mandate was?" Frankly, it didn't matter who won the election. I knew what the mandate was going to be, even before the election was over, and that was the deficit. The deficit was the issue that dominated the campaign in both parties: it is going to dominate the discussion on an overall budget; it is going to dominate the discussion of the agriculture bill; and, it is going to dominate the discusssion on how we keep this economy going. There's no doubt about it, emphasis on the deficit is going to be a key in any kind of formulation of public policy. Therefore, where do we begin?

I'd like to say at the outset that I believe that the key to having a strong farm economy lies in the enhancement of farm income. I really believe that we ought to focus on that objective. While there are other worthwhile objectives, they will be caught up in the process if we concentrate on improving farm income.

But before we get to how that will specifically translate into a new policy, I think it is very important to understand from a historic standpoint where we have come from in our agricultural policies and where we might be going. You only have to look back to see that our farm policies today are basically, with a few amendments here and there, policies of the 1930s and 1940s. We have had those policies on loan rates, price supports, acreage set asides, direct payments, you name it, the basic litany of approaches has been in place over the years. We have had these policies, yet a monumental challenge remains, in what direction are we going to head to see an improvement in the farm economy, particularly in farm income?

Take just one of those farm policies from the past, the concept of parity. If we take parity as initially conceived, based on the prosperous years of 1910 and 1914, and look at the dairy program, a 75 percent parity support level would translate into a $17.00 per hundred weight price tag. We have gross overproduction at a $12.60 support level, the higher one could mean a billion dollars more that would be spent on the dairy program.

I would also say that there are other farm policies that we have had which if restored to original formulations would show equal insensitivi to the deficit. And, the way these programs are set, without caps, appropriations are always there. Today, and at least for the next few decades ahead of us, no matter how you slice the budget, the argument of the deficit and how we can really get a handle on our federal resources, and the allocation of those resources, is going to be a major, major battle.

The truth is, as a result of decades upon decades of programs, this nation is not only productive, it is overproductive; this nation not only provides compensation for farmers, it has created government expenditures that have climbed above acceptable levels. And, in spite of what we have done with the intention, the very good intention--and I can tell you coming from the state of Indiana, it is critical intention, one that I subscribe to very much--of protecting the "family farm", we are still seeing the numbers of farm units dwindle. In fact, they have declined from around 6.5 million in the 1930's to 2.4 million today. At the same time, the cost of the farm programs has grown dramatically through the years, putting pressure on the already bloated federal budget, yet still we have seen farm numbers decrease.

Looking at gross farm income, which does not include off-farm earnings, it has not improved dramatically; it equalled $159 billion in FY 1983, down from the previous two years. Net farm income, which also does not include off-farm earnings, equalled $16.1 billion in the same year, down substantially from 1982, and far below FY 1981's $30.1 billion. Net farm income in 1983 stood at $16.1 billion despite an $18.8 billion price support program and the transfer of $9.0 billion in PIK commondities to farmers.

And, we must look at USDA expenditures for programs, that is, both on-and off-budget spending. For FY 1983, USDA's program levels reached $71.9 billion, almost one-half gross farm income. Furthermore, USDA's actual 1983 outlay, which is the on-budget component of the program levels, reached $46.4 billion. Indeed, outlays were more than double farm income, were 30 percent of gross farm income, and were twice as much as normal outlay levels in the past. The reason for these large rises in expenditures was surpluses, due in part to the 1980 embargo then exacerbated by, I think, our farm programs.

Another example of the problems in agriculture is the financial situation in the farm sector. Despite the availability of low cost federal loans, we still have a large number of farmers struggling to stay in business. At the same time, the Farmers Home Administration has more than $62 billion in outstanding loans and some analysts estimate that up to one-half of these loans are at risk. This figure does not include the loans made available to the farmers through commercial banks or the Farm Credit System. No matter the underlying reasons for this situation, something must be done to address the problem and stabilize the financial situation for many of the nation's farmers. In particular, when you look at the farm credit problem--and, I think it is especially acute for our young farmers--there are many who may

not want to admit it, who are really near the perils of bankruptcy, they are right at the brink. Many of them are good farmers who have worked the soil for years. And, unfortunately, too many of them are the young farmers who are just coming on.

Additionally, the United States saw a substantial decline in its farm exports between 1981 and 1983 after 10 years of growth. These are some of the facts and statistics that I think we are going to have to keep in mind as we address the next year's omnibus legislation.

Also, as we move to consideration of the 1985 Farm Bill, I think that it is important that we go back and review the 1981 Farm Bill and see if we learned anything from that experience. Heading into 1981, we all had the attitude that the United States should go ahead and produce and produce and produce, that we would solve the world shortage of food. We also had the somewhat naive view that other nations would sit passively by and not follow along with expansion of their own economies and farm production; that the US, as we have done so often in the past, would go at it alone and take care of the world. Why not? In the 1970s we saw our exports expand 150 percent; therefore, if we would just go out, as I said, and produce and produce and produce, we would be able to go ahead and take care of the world's food needs. We also have to realize that in the late 1970s and 1980 in particular, we had just come off the inflation binge--go out and buy, don't worry about the financing; it's going to be there, just go out and extend and extend and extend--The problem as we now clearly see, is that there has been overextension; we now can see the scope of the problems that our binge has created. It has come back to haunt us.

And, what has happened since that time when we implemented a farm program that had very rigid price and loan supports? Another unforeseeable circumstance happened. We saw recession, perhaps the most severe economic setback since the Depression, not just here in the United States, but worldwide. And we saw high interest rates continue to plague our economy, and these same high interest rates caused an increase in the value of the dollar. This overvaluation of the the dollar means that our exports are going to be higher priced overseas while other countries exports are going to be cheaper here. And, we saw an unfortunate situation develop with countries around the world beginning to use subsidies as a norm rather than an exception. We saw the implementation of tariffs rather than the philosophy of fair free trade.

We also saw the problem with weather which certainly is an uncontrolla factor. So what can you say about the 1981 Farm Bill with its inflexible provisions for stepped increases in price supports and high levels for loan rates. Did we learn anything from that?

Well, obviously I think the one thing we did learn-and it can be said again and again--one certainly cannot predict the future. Because of this inability to predict the future, there must be much more flexibility in the 1985 Farm Bill than what we had in the 1981

Farm Bill. It is also clear to me that the rigid price and income supports combined, plus the related production controls, have overall served to heighten the problems of the U.S. agricultural economy rather than to solve them. First, the support prices have provided a floor for major competitors to use to their advantage. Second, our steadily increasing target prices have provided an economic incentive for our competitors to expand their own production. And third, our continued reliance on production control programs has sent a strong signal to other surplus producing nations that the U.S. is willing to unilaterally make the supply adjustment for the rest of the world.

There's another lesson from the past decade and that is that we must put our own economic house in order. We have got to lower the deficits and bring down the value of the dollar and reduce interest rates.

And, then we must work to influence those forces beyond our borders: the world recession and the continuing use of unfair trade practices by many of our competitors. I believe we must not underestimate the importance of staying competitive in the world markets, especially since domestic demand, except for hard to reach pockets, is stagnant.

Now let me address the need for an agricultural trade policy. I believe that this is one of the most important things. And, I will dwell upon it to some extent because of its importance. I believe that agricultural exports are the lifeblood of the agricultural economy. The U.S currently exports 60 percent of the wheat, 45 percent of the soybeans, and 50 percent of the cotton it produces each year. U.S. agricultural exports reduced overall trade deficits by 20 billion dollars in 1983, not an unsubstantial amount in an overall trade deficit of 58 billion dollars in 1983; a similar agricultural trade surplus is expected in 1984 when the overall trade deficit is projected at $130 billion. Additionally, our agricultural exports, along with international food aid, not only encourage economic growth and trade, they serve humanitarian needs that help to promote a safer world. If the major world powers are inextricably tied to one another in a global network, it is less likely that there will be a major international confrontation.

However, while our agriculture industry has thrived for so long because of its ability to compete, it is now up against one of the greatest challenges that it has ever faced. The key question before those of us who have a stake in the future of American agriculture is, how can we regain our competitiveness and once again reestablish ourselves as the world's leader in the agricultural export market? The answer to this question is certainly complex because of the growing interdependency of U.S. agriculture and the world economy. Given the importance of agricultural exports, it is vitally important for us to work together on a plan to regain our export competitiveness.

I believe that a sound and effective plan must involve three elements: First, we must develop a new domestic farm policy that will foster a competitive environment for U.S agriculture. The debate on the 1985 Farm Bill will provide an opportunity to develop an agricultural

policy which is truly market-oriented. What do I mean by market-oriented? I mean that our basic loan levels and income price support should be tied to the market as closely as possible. We would want to maintain for producers, on one hand, a basic level of supports, while on the other, allow enough flexibility in the system so that the level of support can reflect and adjust to changing domestic and international conditions. Obviously this can only be done by giving the Secretary some discretionary authority to adjust price supports, perhaps within a range. As part of this plan we must begin to move slowly, step by step, away from our reliance on acreage reduction, paid diverson, and other types of supply management programs. These programs have only served to reduce our production capacity and competitiveness while encouraging our foreign competitors to increase their output and world market shares. Second, we must develop a sound U.S. fiscal and monetary policy that focusses on reducing the budget deficit, bringing interest rates down, and re-aligning the value of the dollar. The third aspect of the program and, one that I want to discuss in a little more detail, is the need to develop a long-term agricultural trade policy. We find ourselves with a number of policies and programs that are not well-coordinated and often run against our goal of expanding agricultural exports.

For this reason, I am formulating a bill I will introduce in January called the "Agricultural Trade Enhancement Act of 1985." I believe this bill will provide a blue print for us to begin to address the issue of expanding agricultural exports. I will outline the major features of the bill, as I conceive it, and I will certainly look forward to comments from all who are interested in improving our agricultur. export position. My proposal has the twin objectives of increasing farmers' income through fair and expanded trade, and of enhancing the U.S. image as a reliable supplier of agricultural commodities by improving protections against selective embargoes for agricultural export contracts. With these objectives in mind, my proposal is divided into three parts.

The first part would develop an effective plan for increasing foreign market access for U.S. agricultural products. Under this section, the Secretary of Agriculture and the U.S. Trade Representative would be required to establish an inter-departmental committee whose major function would be to identify all major existing unfair trade practices and then work through existing agreements and laws to achieve a significant reduction or elimination of these practices. If, however, these negotiations prove unsuccessful, in a specific time frame, the Secretary of Agriculture and the USTR must take actions as allowed under U.S. law, and make full application of duties and fees, rules and regulations and a variety of financing arrangements. If the government is going to ask producers to accept a more market-oriented domestic farm policy, then it is only fair for the producers to ask the government to help them fight barriers to access to world markets.

The second part of my proposal focusses on expanding our market development and export credit programs. We must provide countries,

particularly those developing nations that are facing large foreign debts, with adequate credit if we are going to expand our agricultural exports. This is particularly important in that approximately 40 percent of our agricultural exports now go to developing countries in this category. We must provide the Secretary of Agriculture and the U.S. Trade Representative with a series of creative export credit programs in an effort to provide more attractive terms for our foreign customers. Under my proposal, the funding for export credit guarantees and direct loans would be expanded under provisions of the Food for Peace Act. An intermediate term program would be authorized, with a payback schedule of three to ten years. The Secretary would be required to fund those programs up to $500 million in each of the next four years.

The third part of my proposal would provide more protection for agricultural contracts, including ones that could be set at a future time, from selected embargoes. As a result of the disastrous 1980 Russian grain embargo, which impacted the farm sector unfairly, Congress approved language in the 1981 Farm Bill and again in the 1982 Commodity Futures Trading Commission Reauthorization law to provide substantial new protection to agricultural export contracts. I believe broader coverage is needed and the language I am proposing would hopefully provide this.

I think our farm sector is remarkable. As farmers, as an agricultural community, as individuals, we certainly understand challenges and we understand how to produce. Our prime objective ought to be how to improve farm income. I do believe that, if we are going to do that, then we are really going to have to look at new and positive and innovative farm approaches in the 1980's and the 1990's. Some of the things that I have outlined provide an overview of my thoughts. But, I believe that we have got to address these problems. We must address these problems head on. We understand how to work, we have the work ethic, we have the ideas, and, we have the abiltiy. But I do believe that it is time that we do look at some fundamental changes in our approach to farm policy. And, if we do want to have a more market-oriented farm economy --which I believe is the direction we ought to go--then certainly we have the responsibility to ask our government to take action in this sense: it should put its fiscal and monetary policy in order; it should put its farm policy into a more flexible mode; and, it should assure a strong and aggressive approach to export markets. The agricultrual trade bill I am offering, I believe, is going to be one of the novel approaches in the 1985 Farm Bill.

I look forward to your input, suggestions, and your ideas over the coming months. The competition of ideas, as well as the competition within the farm community, would certainly be the best answer and the best solution to all the problems that we find facing us in this very crucial year. Thank you.

There are two reasons why I've been looking forward to this portion of today's program. First, it is certainly an honor for me to share the rostrum with the distinguished individuals who have taken the time to be here for this discussion of 1985 farm legislation.

The great importance of this legislation -- the tremendous impact it will have on agriculture, perhaps more than ever before in current history -- is the second reason why I was anxious to be here today.

I want to commend those who are responsible for planning and organizing this Outlook Conference for the attention being given to the upcoming farm legislation. I believe we will all benefit from the information that will be presented here this week.

As your program booklets indicate, this portion of the Outlook Conference is designed to provide you with various viewpoints on farm legislation. Those viewpoints are coming from congress . . . the administration . . . the private sector . . . and the farm sector.

This is a healthy exercise. It's a constructive exercise that has been taking place, in one form or another, for more than a year now.

No doubt, some of you here today probably attended one or more of the regional listening sessions we held on the future of agriculture. And more than likely, some of you even participated.

Altogether, we heard hundreds of persons and have received thousands of pages of testimony. And I can assure you that we have examined every single page. We are in the market for answers.

As you listen to the viewpoints being offered today, you may hear the same common thought which underscored so much of the testimony at our listening sessions.

Remarks prepared for delivery by Secretary of Agriculture John R. Block before the USDA Agricultural Outlook Conference, Washington, D.C. on December 4, 1984

Simply stated, over the past 50 years -- particularly in the last decade -- we have witnessed a tremendous change in agriculture. And, to be perfectly candid, it's been getting away from us.

We have not used the proper tools to deal with the situation. We have used a pipe wrench when a small pair of pliers would have done the job. We have been playing catch up -- chasing a rapidly changing agriculture with outdated farm programs. And we have all reached the point where we know it can't continue any longer.

At this point, I want you to see a slide show entitled "U.S. Farm Policy At A Crossroads". It was put together by some of the people here at the department. It covers the basic issues relating to where we stand today.

I've seen it several times . . . it's a good show . . . it doesn't take any positions . . . and I think you'll find it quite interesting. After the slide show is completed, I'll add a few of my own observations about the future of agriculture. With that said, let's watch the presentation.

THE FUTURE OF AGRICULTURE

My compliments, again, go to those at USDA who had a hand in putting this slide presentation together. I think it tells a powerful story about what has been happening in agriculture.

But the story of agriculture is only beginning. Some believe that even greater change lies ahead -- perhaps beyond our imaginations -- and that we're going to witness it in our lifetime.

At the same time, let us not forget that we have some serious problems in agriculture today. To put it bluntly, it's darn tough out there. And worst of all, many of today's underlying problems are far beyond the control of the individual farmer and, in fact, beyond the reach of any reasonable farm program.

Without question, one of our highest priorities as a nation must be to resolve the problem of our budget deficit. At the same time, we must continue to lower interest rates and keep inflation under control, if our nation's farmers are to share in the ongoing economic recovery.

Another priority is to design a sound agricultural policy to replace that which is currently on the books. USDA, through its World Agricultural Outlook Board, has come up with a long-term outlook that might surprise a few people.

This outlook presents a future which some would say is exciting -- while others might claim it is frightening. It all depends on how well we are prepared to face that future.

This particular outlook shows farmers and ranchers in this country using even more sophisticated techniques . . . becoming even more efficient . . . and even more productive. Productivity beyond what you could imagine! And you know what that means.

For example, a new seed treatment is being tested in the Pacific Northwest which may increase wheat yields by 30 to 40 percent. Likewise, increased use of higher yielding soft wheat varieties -- up to 100 bushels an acre, or two-and-one-half times the current U.S. average -- would allow producers to grow these new varieties at costs low enough to compete with feed grains.

Further, the use of a synthetic bovine growth hormone produced from the new genetic engineering technology, suggests that production per dairy cow could be increased up to 40 percent.

Likewise, a new high yielding semi-dwarf variety of long grain rice called "lemont", is boosting yields as much as 40 percent -- because of its ability to withstand lodging caused by excess water or winds.

These are but a few examples. If government is to be involved in this future -- and most agree that some degree of involvement is necessary -- then government must also acknowledge its responsibility in shouldering some of the blame and burden for the problems that continue to face this industry. Most importantly, it must take the lead in instituting more effective and responsive programs and policies.

What we sincerely need is farm legislation that is sturdy enough to stand up to the inherent volatility and uncertainty in agriculture -- yet, flexible enough to stay with a rapidly changing agriculture.

Now is not the time to present a detailed proposal for a farm bill. We aren't quite ready for that yet. Through the Cabinet Council Working Group chaired by Deputy Secretary Richard Lyng, we have been meeting almost daily to develop a proposed farm bill for the President's consideration. We hope to have a proposed bill ready for transmittal to congress by the end of January.

However, at this time, we can firm up some of the goals and objectives we see being included in a farm bill. There are five of them.

1. First, this farm legislation should be long term in design. Unlike the previous omnibus farm bills, the 1985 legislation should clearly state the direction of farm policy through the end of the 20th century -- not just for another four years. Farmers need the ability to make long-term decisions.

2. Second, we need a market-oriented bill that will ensure that we are competitive in world markets. Loan rates for all commodities should be set at market-clearing levels and tied to a percentage of a historic moving average of U.S. market prices for each commodity.

3. Third, we need consistency. For the first time, the farm bill should provide more consistency among commodity programs and other agricultural policies. International trade, conservation, credit, research and grain reserve policies and programs should be integrated with the objectives of the commodity programs. This will help ensure that government programs and policies are not working at cross purposes, as they so often do now. Yes, I said cross purposes. Great inconsistencies!

Think about it. Does it make any sense to spend over $1 billion a year to reduce soil erosion, when our domestic farm programs encourage sod busting of erosive land?

Does it make sense to have commodity loan rates above market-clearing levels, when -- at the same time -- we spend millions to increase agricultural exports?

Does it make any sense to offer highly subsidized farm credit to attract more resources into agriculture, when surpluses are the problem -- and we have programs in place to cutback production?

Does it make any sense to lend dairy producers money to buy more cows when much of the milk they produce goes to the government?

Does it make sense to continue to provide a buffer through acreage reduction programs and big reserves, while other nations increase their production and market share?

4. Fourth, the legislation should provide for an orderly transition period of, say five years, through all commodity programs, as well as on other programs. It should phase out obsolete and unnecessarily restrictive programs and phase in the market-oriented provisions.

I don't believe in pulling the rug out. And I have heard President Reagan say it more than once -- that we can't pull the rug out from underneath agriculture.

5. My fifth point is equity. At the end of the transition period, producers under the commodity programs will be dealt with in a fair and equitable fashion.

I realize that no one has a crystal ball. No one can lay claim to having all of the answers. But the experiences of the past decade have surely taught us a few lessons. The point is -- have we learned from them?

Yes, agricultural policy <u>is</u> at a crossroads. There is a desperate need for an agricultural policy that is flexible, consistent and long term in design.

The Agricultural Adjustment Act of 1933 represented a new era in farm legislation in its attempt to improve the financial condition of farmers. While it was enacted as a temporary method to deal with a worsening economic situation, its basic provisions -- with some minor modifications -- are still part of current farm legislation.

The 1985 farm bill comes at a time when agriculture is in need of a new direction. Like the 1933 legislation, the 1985 farm bill must be bold and innovative in its approach.

It must not be like previous legislation that is restrictive . . . that seeks to reduce production through supply management controls . . . and, most important, is not temporary in terms of its design or objectives.

In summary, the 1985 farm bill must begin to address the problems that constantly face agriculture. This country can no longer afford large explosive, open-ended budget expenditures. This country can no longer afford farm policies that do not allow us to be competitive in the world. This country can no longer afford policies that lead to a misallocation of resources in the farm community.

If a Herculean attempt is not made to adopt a responsive market-oriented farm policy, the U.S. will risk losing one of its most efficient industries. In the end, producers, agri-business, taxpayers and consumers -- all will suffer for not taking the appropriate and necessary action to restore prosperity to our most important industry -- agriculture.

It's the government's responsibility to provide leadership in charting a new course -- one that's market-oriented, yet provides a compassionate transition period until rural America makes the necessary adjustments.

It is the responsibility of the federal government to provide a long-term, consistent agricultural policy that farmers can depend on year after year, and one that ebbs and flows with the market and allows adjustments to be made.

It also is the federal government's responsibility to challenge our competitors, rather than unthinkingly aid and abet them -- just as we address the difficult and important issues like soil and water conservation and agricultural credit in a direct but reasonable manner.

Agriculture is too important to do otherwise. If this does not happen, neither our farmers nor our nation will be well served . . . and all of us will suffer.

AGRICULTURAL POLICY: VIEWPOINT FROM THE INPUT SECTOR

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OUTLOOK '85

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It is an honor to be part of the program today, especially this year as we look ahead to the 1985 Farm Bill. Historically, we in the input industry have not been major participants in formulating farm policy. To a large extent, most of us have considered farm legislation to be an external variable over which we have had very little control.

However, the PIK program made it painfully obvious just how important agricultural policy is to the fertilizer industry. In 1983, the fertilizer industry experienced its worst decline in history. Almost one-third of the industry was shut down with a high percentage of the remaining plants operating at less than full capacity. With that kind of an impact, you can see why I take my role on this panel seriously. Our industry can no longer idly sit in the background.

Today, my aim is to offer some suggestions for action and to leave with a note of optimism for the industry, the input sector, and agriculture in America.

To set the stage for my comments on the 1985 legislation, let's first take a look at how we got into a situation where it became necessary to institute the PIK program.

In the 1970's, U.S. agriculture experienced a period of unprecedented growth in exports. In ten years, U.S. exports increased from an average of just $10 billion to over $44 billion. Exports of U.S. grain and oilseeds jumped two-and-a-half times. This phenomenal growth in U.S. exports occurred in part due to the growth in world population and income levels. However, other circumstances also provided strong catalysts. For example, the floating of the U.S. dollar against foreign currencies; the decision of Eastern BLOC countries to expand meat production; the ample supply of credit to LDC's for financing imports; and periodic crop shortfalls in the USSR and other areas of the world.

The U.S., with ample supplies and low prices, found itself in an opportune position. It captured nearly three-quarters of the expansion in grain-trade during the 1970's!

While most economists agreed that agricultural exports would not continue to grow at the same pace, most remained optimistic about the future. And why not? World population was growing at a rate of 80 million a year, dietary expectations were still rising, the ability of emerging nations to finance imports did not appear to be a major constraint, and the U.S. appeared to be the only major supplier that could meet the projected growth in world food demand. In 1981, however, the optimism began to fade. U.S. exports declined for the first time in a decade, dropped again in 1982 and in 1983 and, in terms of volume, will decline again in 1984. What happened?

The drop in exports can be attributed in part to a number of external factors--the principal ones being the global recession, the value of the dollar, the unfair trade practices of some of our major competitors, and bumper crops which occurred throughout the world in both 1981 and 1982.

However, a substantial portion of the decline in U.S. exports can be attributed to our own agricultural policy.

In 1980, we embargoed agricultural exports and forced one of our major customers to turn elsewhere for its agricultural needs. To make matters worse, in 1981 we passed farm legislation, which within a year after its signing, made us non-competitive in world markets. At a time when our policy should have been to market excess supplies, our policy was to price ourselves out of the market and place a price umbrella over the rest of the world.

Then, in 1983, in an attempt to correct previous mistakes, we unilaterally instituted the largest acreage reduction program in the history of agriculture.

Adding all of these factors together, it is amazing that our exports did not decline more than they actually did.

The question now is where do we go from here? Obviously, monetary and fiscal policies will play a key role in determining the future well-being of the agricultural sector. As pointed out by Marion Hartman, President of the Ohio Corn Growers Association, "A lowering of interest rates would be the best farm program we could possibly get." I agree;

monetary and fiscal policy will play a key role. But, today I would like to limit my comments specifically to the upcoming farm legislation.

To be proactive, comprehensive, and effective, the new farm legislation must take into account the global nature of agriculture. In our opinion, there are five key areas that merit consideration.

First, the 1985 Farm Bill must recognize economic reality. By not allowing market prices to reach supply/demand equilibrium, we not only distort market signals and cause farmers to make wrong production decisions, but often encourage more investment in agriculture than is economically justified. We must let the natural forces of the market play the major role.

Second, the 1985 Farm Bill must recognize the long-term needs of agriculture. Too often we have tried to solve the problems of agriculture by treating the short-term symptoms rather than the long-term causes. After our experiences of the last few years, it should be obvious that short-term band-aids and patches, although politically palatable, are costly, may or may not meet their objectives, and often aggravate the underlying problems.

Third, the 1985 Farm Bill must recognize the interrelationship between our domestic farm policies and our ability to compete in international markets. Whether we like it or not, U.S. agriculture is no longer insulated but an integral part of the world economy. It would be foolish to develop domestic programs without considering their impact on world agriculture and on our ability to export. We must recognize the forces of a global economy.

Fourth, the 1985 farm legislation must recognize that today's agriculture is not the agriculture of the 1930's or even the 1960's. The average farm operation today is larger, more productive, and more specialized. Fewer than one-third of our farmers account for almost 90 percent of total cash receipts from farming and account for some 80 percent of total farm expenditures. Let's not design policies that support the inefficient at the expense of the efficient.

And finally, policymakers need to keep in mind that the agricultural sector consists not only of producers but also of supporting agri-business industries. While it is true that the input industry cannot effectively compete without a healthy farm economy, it is equally true that the farm sector cannot effectively compete without a healthy input industry. We must not ignore this inter-dependence.

Although this may be an oversimplification, there are three basic approaches the new farm legislation can take: We can continue our current policy of adjusting our farm programs on a year-to-year basis with no clear goal or direction, we can opt for a controlled agriculture and produce primarily for the domestic market, or we can fully utilize the productive capacity of American agriculture and compete in the world market.

There has been widespread disagreement on which approach should be taken in the new farm legislation. However, there is equally widespread agreement that current policy is not the way to go. It should be no surprise which of the two remaining alternatives is favored by the input industry. Today, agricultural exports account for one-fourth of farm income, two-fifths of planted acreage, one-third of all export shipping, one-fifth of U.S. foreign exchange, and directly support over 1.0 million jobs. To turn inward at this point and design policies that would negate our competitive advantage in world markets would be disastrous not only for agriculture but for the entire U.S. economy. Clearly, agriculture will grow and prosper only if we can expand exports.

Now, let me be more specific about export policy:

In order to increase the exports of U.S. ag products, we need to develop export policies that will reverse our role from one of being the "residual supplier" to one of being the "preferred supplier." To accomplish this objective, however, we are going to need the proper tools.

First and foremost, we must restore our image as a reliable supplier. The devastating impact that embargoes have had on the agricultural sector has been well documented. Unfortunately, we didn't learn from our mistake in 1973 and instituted another embargo in 1980. It is time that our farm policies specifically recognize that embargoes not only have a short-term impact on export volume, but also hurt long-run prospects by fostering foreign competition.

Second, we need to institute a full line of credit programs with the guarantee of adequate funding on a long-term basis.

An assured supply and an assured means of purchasing that supply equates to assured long-term customers for U.S. products.

Third, we must focus on effective ways to eliminate barriers on world trade. This includes export subsidies as well as import restrictions. World trade in agricultural products will continue to stagnate at everyone's expense, if we cannot find ways to provide access to open and free markets. To achieve this, we should work toward stronger enforcement of existing trade law and, at the same time, urge for a new round of negotiated agreements. If we are unsuccessful in this effort, then we must be prepared to take stronger action.

In addition to these three, there are a number of other ways to promote U.S. exports; for example: expansion of the P.L. 480 program; expansion in the use of bilateral trade agreements; and expansion of our market development efforts through the cooperator programs.

In short, the U.S. must become more aggressive in world markets.

Although the focus of agricultural policy needs to be directed more toward export expansion, it is doubtful that these policies alone can solve the problems of the agricultural sector. Even if exports can be successfully expanded, the U.S. supply capability is expected to continue to exceed both domestic and export requirements for at least the remainder of this decade. Consequently, we need to turn our attention to the second half of the equation -- that of support and supply control programs.

The list of modifications that could be made to the 1981 Farm bill is almost unlimited, but let me address three areas which, I believe, merit special attention.

First, loan rates and target prices: Undoubtedly, what to do with these programs will be one of the more controversial issues in 1985. In our opinion loan rates and target prices must be formulated to better reflect today's highly competitive marketplace. They must be made flexible and allowed to reflect changing market conditions, both here and abroad, and they must be structured to avoid interfering with the farmer's decision on what to produce, how to produce it, or whether he should be producing at all.

Let's not try to solve all of the financial problems of the crop sector through the support programs. If it is perceived that credit is the major problem, then let's solve it through the credit system. If saving the inefficient is perceived to

be an objective, then let's do it through a direct cash payment. It is time we start using support levels for what they were originally intended: to serve as a "safety net" against periodic downturns. To use them as a floor price to support inefficient production reduces demand, creates over-supply, and stimulates our competitors to expand acreage.

Next--the reserve programs. A number of economists have argued that with the unpredictability of weather, it is essential that we maintain a buffer stock. While this may be a valid point, for the government to amass stock levels similar to 1982 or 1983 is clearly unproductive and disruptive.

If a reserve program is to be continued in the 1985 legislation, it should include a cap or some other means of limiting government accumulations and allow excessive supplies to be cleared by the open market.

The third area is supply control programs. Most of us in the input industry supported the PIK program. Even though we knew the impact it would have on our businesses, we also knew something had to be done. Farm income, prices, and land values were all declining, and it looked that if drastic action were not taken, the situation would get even worse. At the time, the PIK program appeared to be the best alternative.

However, we supported the program with the understanding that PIK would be a one-time, and one-time only, program.

If we learned anything from PIK, it should be that supply control programs must be structured so that they will encourage long-term participation. Allowing growers to participate in an "on again/off again" manner invites market instability and creates uncertainty with both growers and agribusiness.

The task before us now is to develop a workable farm bill; one that can exploit our competitive advantage in world markets; one that allows American agri-business to plan effectively to meet the needs of our domestic producers; and one that insures our having a viable and economically sound agricultural base for the future. Needless to say, this will not be any easy task.

Let me leave you with one final thought: The 1985 farm legislation will be one of the more debated issues in Congress next year. Groups which have traditionally never been active in farm legislation are now putting forth a full-scale lobbying effort. Compromise will be difficult and time-consuming. But, we are all in this together.

While we all have our own opinions, we must step back and consider what is best in the long-run for agriculture. If the whole does not survive, neither will any special interests.

Through a collaborative effort, I have no doubt that we can design a viable farm policy which will strengthen American agriculture and, in turn, strengthen its individual sectors. Whatever we do, it must serve the common good.

Dean Kleckner, President
Iowa Farm Bureau Federation

Annual Agricultural Outl ok Conference
Washington, DC, Session 10
December 4, 1984

Following Senator Quayle and Secretary Block and Barney Baxter and certainly with Don Paarlberg, a very noted economist from Purdue to this microphone reminds me of the fellow that said he was growing up the last -- last young boy of a large family of children, they ate a lot of chicken because chicken was cheap and he said I was eight years before I knew the chicken had anything else but tails and wings.

And following these people, I'm in the same position. Perhaps I'm going to say the same thing but I'll try to say it differently. But I do agree with much of what's been said. You've had a lot thrown at you this morning and because the farm bill is being talked about and will be talked about a lot more.

I heard the story the other day of a little boy that was nealing down by his bed saying his good night prays, his go to bed prays. His mother was in the room as she usually was. He was being very soft, quiet when he was praying. She said to him, "I can't hear you, dear." He said, "I wasn't talking to you."

There is going to be a lot more talk about the farm bill in the next six months until we get one, if we get one in the summer of 1985. I want to my start my talk by going back. I do farm as Don Paarlberg pointed out in northern Iowa, corn, soybeans, hogs. I was farming back in the early seventies. I remember dollar corn. For those of you here from the midwest, we talk about corn, maybe wheat, tobacco, cotton, sugar somewhere else. But in Iowa and the midwest, it's corn.

We had dollar corn. We had inflation running at 2 to 3 percent a year. President Nixon put on wage and price controls in the early 70's when inflation reached the unheard of level of 4 percent, believe it or not. Remember that. And we accepted it because it was unacceptably high at 4 percent. Now we break our arms patting ourselves on the back when it's back down to 4 percent. A dozen years ago, that's when it was.

Russia cleaned out her grain bins in the early 70's, prices spurted, the go-go years started, farmers and lenders, not just for farmers. Lenders participated in those go-go years too, so did the farm magazines. Some of you are out here today. You printed those stories, we read them and swallowed them

and so did the colleges. Now I don't know about Purdue particularly but most of the rest of them, at least, fell in line and it was go.

Inflation began to pick up, land prices, machinery prices went up, though, faster than inflation. We couldn't really make a mistake farming in those years. Unless you had corn leaf blight or disease in your hog or something, everything you did was right. Some bankers or lenders I should say urged caution to us farmers.

But when they urged caution to us we said about our lender, you know, he's not with it, he doesn't really understand or we said, the only people they want to loan money to is to those of us that don't need it. If we need it, he won't lend it to us. Or then we said to our banker, if you won't lend to us, we're going to go down to the road to the next bank and he will and he would have and the first banker knew it so he lend it to us too.

They participated in it and I think we help them make that decision. And the last vestiges of spending restraint virtually disappeared there in the early or mid '70's. The land boom was on. Farm debt was moving up, jumping up actually. We generally had good crops in those years. We had fluctuating prices

but we always have fluxuating prices in agriculture but they were generally reasonable. We had two embargoes. We recall, most of us, the Carter embargo but Nixon and Ford also had embargoes.

Carter was elected in 1976 and inflation began to pick up. I should say it really began to roar in those years. Many of us were making decisions. Many of us in agriculture were making decisions to expand. It was the right decision at that time based on those circumstances. It was the right one. And for some funny reason most of us seem to think, helped along I guess by the magazines, the colleges, the lenders and so forth, that it would go on forever and maybe keep going, keep booming.

Every poll that I read showed inflation to be a number one concern of the people of this country or maybe in Detroit, unemployment might have been number one or something. But in general, inflation was everybodies number one concern. Nothing else was close. Exports were soaring as everybody's pointed so far this morning. The dollar was weak. The dollar was weak because nobody wanted to invest in this country under those circumstances. So it was weak and we tend to compare today's strong dollar with that very weak dollar and neither one is really a valid

value in my opinion.

January '80, President Carter put on the embargo. Reagan was elected later in '80 with a mandate to do something about inflation. '81 and '82 we had bumper crops in this country, super crops, best ones we'd ever raised. We had worldwide recession. Demand was dropping. Inflation started to fall more rapidly probably than anybody thought, more rapidly then I thought and I'll bet you if you're honest, more rapidly then any of you thought it could fall from that point forward.

The dollar strengthened dramatically and rapidly which made our exports more costly. The PIK program was instituted in '83 to empty out the grain bins that had been built up from '81 and '82 and other past failures of farm programs that I'll mention in a little bit. We had the drought also in '83 which helped clean out those grain bins, actually did more then PIK did in my opinion but the two together did the job right that it was designed to do.

The debt, though, was build up and the decision to buy the land or machinery or expand the livestock operation that we made in the '70's that was right turned out to be wrong. The same decision that we were making in '80 was wrong. If we made it in

early '70's it was right and it was the same decision. Maybe it was made to accommodate a son or son-in-law coming into the operation or in the case of Dean Kleckner, to expand to make a viable unit with five kids to put through college, you kind of -- one of them is sitting out here today, incidentally. And now a bureaucrat working in Washington, D.C., heaven forbid.

But to get a more efficient unit we made those decisions. My point is, the problem that we're in today was building for years. It was spreading like a cancer or like some other disease and the carrier of that disease was inflation, only inflation. The problem won't go away tomorrow. There is no magic short term answer. There's not something just up there, just out of reach like some people think, including some farmers that -- some magic solution that if we just stretch for on our tip-toes, we can pull it down and everything is going to be like it was in the '70's, it ain't gonna happen. Everything will not be that good again.

We should know by now what doesn't work. We've got a lot of examples, in fact, we've had just nearly continuous examples in the farm program area. We have continuously tried to bail out. PIK was a

bail out. You don't bail out from success, folks, you bail out from failure. And every one of these things we've tried to do has been a result of a failure in farm program. I think that ought to be above some building out here. You only bail out from failure, probably on USDA.

The present farm program that we have today completely lost touch with market reality. We've had ever higher target prices on loan rates and they have signaled that more production was needed. That's what high prices do, they signal more production is needed and less consumption is needed and that's what we've had in farm program. The market prices, if you cut underneath that were signaling less production was needed and more consumption was needed. But the government by being a player set the market and they signaled more production, just what we didn't need.

Guaranteed price levels have encouraged other countries to increase production. We put the umbrella up there. In fact, if we think about it, they have practically guaranteed that other countries would increase production by what we've been doing. Let me diverge a little bit from what -- I diverged from notes, not a prepared text.

I flew back from Canada in a private plane

twin, about six of us in the summer of '83. It was a PIK program, year of the drought, and we were kidding around flying from Winnipeg to Minneapolis, where was the Canadian U.S. line. And we weren't sure we were going to be going into North Dakota or Minnesota. We suddenly saw the Red River which flows north between Minnesota and North Dakota and we were just east of that, so we knew we were coming into Minnesota if we were that far and we didn't know, and I looked out of the window and saw something on the ground that startled me and I just started to say, I wonder what that is, when I knew what I was looking at.

Let me describe what it was. It was a line -- it was a clear day. We could see maybe ten miles in each direction, a little bit hazy but clear. North of a line on the ground that was running straight east and west, the direction we were coming from was north, everything on the ground in the Red River Valley was yellow or green. South of that imaginary line, that's what startled me with what I saw, it was about 30 or 40 percent black and yellow and green. What was it? Obviously, we're at the black acres, we're in Kitson County, Minnesota and they were PIK acres. They were held out of production.

North of that line in Canada everything was

planted and I wish I'd had a camera. And I said to myself, how dumb can we be in this country to do what we're doing. We're cutting back and every other nation in the world including Canada is increasing because we're cutting back. Minister of agriculture in Canada, in fact, said that year when we announced our PIK program, he told his farmers great, you farmers in Canada produce more wheat and we'll take the U.S.'s market and they've done it.

We simply can't set our prices above the market clearing levels that are required to sell on the export market. We can try but it won't work. Well, all this has passed and we ought to learn from it. Where do we go from here? I'm a believer if you want to change something you've got to change something. And if we got to change farm programs, we don't want to keep on with what we've been having. Two approaches. I don't think there's any other than two. Greater reliance on the market to set prices and regulate production or greater reliance on government to set prices and regulate production. There just ain't any other solution then that.

We can muddle along in the middle potitically like we've been doing to get run over from both sides but if we want to do something we've got to

do one or the other, more government or more market. On government, I think we'd have to shrink our egg production base back to the domestic market, write off export. If that's the way we want to go, let's go that way. Write off the 30 or 40 percent or 50 percent in some commodities that we sell overseas. Once in a while short supplies, some are overseas, might make them come back to us after they went everywhere else.

We'd have high target and loan prices. We'd guarantee a profitable price level for American farmers if we went that way. We could do it. We would have to have an effective supply management. I said cut back 30 or 40 percent. I don't mean a 10 percent voluntary acreage reduction, that's nothing. Us farmers aren't dumb, you know what acres we cut back? We cut back our lousy acres and then we put the fertilizer and the work in the good ones and we raise as much as we did without that 10 percent. That's not effective supply management and we ought to quit talking about it that it is.

Now this is going to work. If we want to make it work. It won't work for very long but it will work. I think we frankly could legislate $4 corn and $12 soybeans and wheat at $6 or $8 if we wanted to for

a little while. Seal off our borders and force our folks to eat it and I'd need $80 or $100 for my hogs to feed the $4 corn to and we'd make all you eat that for a little while but you'd find ways to get around it, I think. I think we even would at my place.

If we went this route, that would mean fewer farmers, it would mean fewer acres, it would mean less of everything. It would be a shrinking agriculture. It would be costly to taxpayers in the agribusiness as Barney pointed out. It would be like having a big old PIK program every year. We could make it work for a little while and it is an option. It's a lousy one but it is an option and we ought to talk about it.

The opportunity for young farmers to start isn't very good right now. It would be even worse under that type of farm program. There wouldn't be as much needed, so how could a young person get started. I don't believe this is the right approach nor will it work for very long. We ought to depend on the market to make this determination to set prices, regulate production. You know, the market's only purpose is to ration supply. The market is not a charitable institution.

There's really two questions that the market asks all the time and it asks continually. If

supplies are excessive, the question the market's asking is, how low must a price go to get rid of all this stuff? And I raise hogs and about three or four years ago that answer was $29 a hundred and that was way, way below the cost of production. But the question the market asks when supplies are excessive, how low does a price go to move it? When supplies are short, the question changes. The question then becomes, how high must a price go to ration the existing supply? And that's what the market is doing daily. The government can't do this. They tried but they don't do it. They don't even know the questions, I guess.

Well, we're approaching Farm Bill '85. There's pain in agriculture as everybody knows. Not everybody's in pain but many are. It's our good farmers as we pointed out earlier. I think the poor ones are gone. And I don't know how you define good and poor but those that haven't done a good job of managing are by and large gone already. The good ones are the ones that do things timely, know what to do, there's many of those in pain today because of high debt. They made the decisions that I talked about earlier; high debt, high interest, trouble; low debt, low interest, not much trouble. That's the way you

cut it today.

I think we're probably past the middle of the pain that we have in agriculture today. Don't know for sure. So what do we do about it? Well, one thing we don't do is do what the fellow did that was swimming across the lake and got three-quarters the way across, decided he couldn't make it so he swam back. I think we're past the middle of the pain. We don't need to go back. We could reinflate the economy. Higher loan levels, I mean, that's going back to the past. In other words, we could redo the things that caused us the pain and, folks, we're going to have that opportunity to do that in this coming session.

Some people, especially some are congress persons, just need to be led kicking and screaming out of the fail policies of the '50's, '60's, and '70's into the '80's into something that works. We can compete and we can sell. We can use the comparative advantage that we have in agriculture. We can out compete, out produce and out sell anybody in the world today in agriculture. We can't do it copper or steel or TV's or stereos or watches. We used to in all of those and maybe we'll do it again someday but today we can't. We have it in agriculture, why don't we take

advantage of that today with a farm program that will allow us to compete and sell?

We need more profitability in agriculture. Profit is not a dirty word. We suffer from lack of it in agriculture. The '85 Farm Bill must provide us with the opportunity to improve net farm income. Now I don't mean just price, net income is volume times price minus expense and anytime you do something on any of those three, you affect income. It must be a market responsive bill. I like the term market responsive better then market oriented but they mean the same thing. It's got to respond to what the market is telling us.

We farmers must, I think, take our production and marketing signals from what the market is telling us without government getting involved in the price setting. Government has a place for involvement in agriculture. Setting prices is not one of those places where they ought to be. I mean, the commodity loans, commodity loan rates should be set at market clearing levels so they don't provide incentives for us farmers to produce more than is needed in our domestic and world market.

The market should set the loan rather than the loan attempting to set the market and that's what

we've had in the past. They can't do it but it's tried and it's gummed it up. Farm Bureau, and I do support continuation of target prices and I might differ from some of those that were here today on that. But I think it should be designed -- should be implemented as it was designed years ago, to be an income supplement for farmers and we need it, I think, when we adjust to our market responsive economy.

The targets will be determined by congress. I think, politically, how much do they want to transfer from the Federal Treasury to Agriculture? $5 billion a year, $10 billion a year, it would be a political. By maintaining target prices and keeping the political tinkering in the target price area, it will allow loan rates to seek their levels so we can compete in the world market.

Congress has got to tinker. Congress is just like little boys in mud puddles, their desire to do something and they got to do it. And let that congress tinker in target prices so they don't foul up the rest of the gears. We have to sell more overseas. We can't lock it away in bins. We cannot hold up a price umbrella for the world. Try to cut our production here when the rest of the world doesn't do it. We're the only country that does this.

We should eliminate the farmer held reserve. It's been used politically by the government to artificially manipulate prices and it has resulted in a build up in stocks. The temptation to use the farmer held reserve politically will always be too much for any government to resist. Let's eliminate it and just use regular crop loans with an extension, if needed, in place of the farmer held reserve.

Soil conservation is needed. Long term conservation reserve if we go the retirement route does certainly make more sense then retiring a little here and a little there on a year by year basis. We need to develop markets, I think, through food for peace and we do need some credit financing of exports. And there was a question earlier about the -- is that right? we're talking about less government. I would hope that we would never need credit financing of exports but I think the Government has an obligation to make the playing field as level as possible. As long as other nations do it, I think we have to respond. It doesn't benefit us in the end.

The only people that these types of things benefit are the consumers of the nation that's the recipient. If we're going to compete with EEC and credit financing, the tax payers of our country and

EEC are paying that bill. And agriculture of our two nations don't really benefit much from that. But I think it'll be needed if it's being used and we need to certainly try to work that down, try to hold it down.

I'm convinced that if we try to solve the current debt, farm debt problem, by tending to artificially set farm prices through farm program legislation, we're going to fail at both. If we try to do -- solve the crunch we're in now with the '85 farm bill, we won't solve the crunch we're in and we're going to have a lousy farm bill again. Let's get the farm bill, have it separate and if we need to do something through Farmer's Home or somewhere else and I think, perhaps we do, do that separately.

Some short term programs, I believe, are necessary to help farmers that are in the most trouble today. Okay, I've said it. I haven't disagreed very much with what the other three speakers that preceded me have said. I say it from a different prospective because I'm out there on those acres trying to make a living from farming it.

We have not had good farm programs. Too many of my compatriots think that what we've had has been free market and they're afraid of moving toward

market orientation. Not true. We've had government involvement, government muddying, let's move away from the fail policy to something that works. Thank you very much.

MODERATOR PAARLBERG: While I sort through these questions, Dean Kleckner, let me ask you this one. You indicate correctly that the anticipations of the 1970's prove to be incorrect. We've had a kind of a consensus here in this outlook meeting, the anticipations during the 1980's and anticipations of a different sort, anticipations of heavy supply, rapid agricultural technology and generally over supply of farm products. How do you feel about that prognosis? Do you feel confident in the consensus that's come out of this meeting in the 1980's?

MR. KLECKNER: In my opinion if we try to lock in a given price on any commodity with rapidly increasing technology, we're going to be in trouble. Example, the one at Cornell with 40 percent increase in dairy production. It's just foolish to think, in my opinion, that we can have all the cows we've got now and the price we've got now and 40 percent more milk. I think we're talking about substantially fewer cows or substantially less price of milk with probably comfortable profits. I think you could translate this

THE NEW FARM BILL: WHAT'S AHEAD IN 1985?

Don Paarlberg
Professor Emeritus, Purdue University

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It is customary at meetings like this for a speaker to consider our commodity programs with as much tolerance as he can summon. This is understandable. We have an enormous investment in these programs: billions of dollars, thousands of jobs, hundreds of political careers, fifty years of rhetoric, and a high degree of farmer dependence. The conventional attitude seems to be to find what good we can in programs on which we have become so deeply dependent.

But I take a different tack, not out of perversity but out of a wish that the full case be heard. I judge that these programs, on balance, have been a failure, spelled F-A-I-L-U-R-E for those who may doubt my meaning. Failure is a fact, I contend, on any or all of five criteria. Here is the indictment:

Economic:
By restricting production and increasing price these programs have conceded market growth to rival exporters. Cotton is the notorious example. Before these programs began the United States produced more cotton than the rest of the world combined. In 1984 the rest of the world produced 5 times as much cotton as the United States. We rank third behind China and the Soviet Union. Other export crops have experiences that are less dramatic but of the same nature. We have conceded growth in the wheat market to the Canadians and Australians and growth in the feed grain market to the Argentinians.

Despite the deepest acreage cut and the largest outpouring of government money in history, farmers are experiencing the most financial stress since the Great Depression. The charge that these programs have failed economically is overwhelming.

Efficiency:
With acreage allotments the commodity programs have tied agricultural production to historic regions, not permitting a shift to more efficient areas. Price supports have given incentives for overproduction, which then requires costly efforts to restrain output. We have idled great chunks of the best endowed agricultural areas of the world, encouraging production in less-favored foreign countries. All of these activities are inefficient.

Equity:
This past year, 44 percent of the program benefits went to the top 12 percent of the farmers. The operators of these large farms have incomes that are, on average, well above the farm and non-farm levels. The commodity programs widen the disparity of income within agriculture.

Certain farm products have these commodity programs: cotton, wheat, feed grains, rice, peanuts, tobacco, dairy, and a few others. Poultry products do not have commodity programs, nor do most livestock products nor do most fruits and vegetables. The programs reflect political power, not equity.

Cost:
In 1983 the cost of commodity programs, $21.7 billion, exceeded the net income of all agriculture, $16 billion. The cost has, in my view, exceeded the tolerance level of the American public. With this audience I need not emphasize the scrutiny, on the basis of cost, that the new farm bill will receive. The huge deficit makes that imperative.

Politics:
Even the vaunted political attractiveness of these programs has been cast into doubt. There have been few political figures more deeply committed to these programs than Walter Mondale. In last month's election Mondale lost the farm vote. Other politicians, who were aware of the shortcomings of these programs but supported them because of what they believed to be the political imperative, are having second thoughts.

* *

It is time for some small boy to come forward and observe that the emperor is without clothes.

* *

These programs did not have to fail. If the effort had been to reduce the amplitude of price fluctuations rather than to boost the price substantially and continuously above its natural level the commodity programs could have succeeded. If long-run considerations had been taken into account along with short-run seeming gains we might today be celebrating success instead of reviewing failure.

* *

You might expect me to recommend abandonment of the commodity programs on the grounds of my assessment that they have failed. But I shall not do that. We can't walk away from them. On certain farms these programs have increased land values, encouraged mortgaged indebtedness, built themselves into living levels, generated high expectations, and created a state of dependency that can be abrogated only with great injury to large numbers of innocent people. It is enough to ask of the competetive market system that it cope satisfactorily with

the ongoing problems of supply and demand; it is too much to expect it also to correct, acceptably and quickly, the dislocations that result from 50 years of government intervention.

The Chinese have a saying: "He who would ride the tiger should have plans for dismounting." What I next outline is a five-part plan for dismounting. There is no illusion that this can be easy.

1. Reduce Loan Levels
   Loan levels are such as to stimulate production and choke off markets. They should be reduced. They should be related neither to parity, which is outmoded, nor to production costs, a flawed concept, but to a percentage of a moving average of farm prices, as is done successfully for soybeans.

2. Reduce Target Prices
   The unacceptable cost of these programs can most readily be cut by reducing the target prices. This could best be done gradually, over a period of years, providing time for adjustment.

3. Limit Production Cuts
   Deep acreage cuts such as we have experienced concede market growth to rival exporters. They require cutbacks in the farm service trades, increase unemployment of farm workers, and make little sense to those who now read of famine.

4. Reduce The Payment Limitation
   The present payment limitation, $50,000, is approximately twice the average family income in the United States.

   I am aware of the argument that if there is a low payment limitation, the big farmers will not come into the programs and if the big farmers do not come into the program there cannot be a big average cut. My argument is that big acreage cuts are undesirable and if a low payment limitation will make them impossible, so much the better.

5. Deal With Financial Stress
   Some farmers are in deep financial stress, largely as a result of heavy borrowing and high interest rates. Estimates vary as to how numerous these farmers are but as a percentage of the total they appear to constitute one digit, not two. Those who have good chances of survival can take advantage of President Reagan's initiative for debt adjustment. This program has the merit of helping those who, without help, probably could not make it, while avoiding help for those who do not need it and those who cannot survive, even with help. The program is voluntary in nature and moderate in size. It can either be expanded or closed out, depending on experience.

There are two very different alternative objectives for our commodity programs. One, which has prevailed hitherto, is to raise prices greatly and permanently above their natural level. It is pursuit of this objective that has led to our present problems. People who subscribe to this objective recommend tinkering with the programs in the hope that this approach will succeed, an unwarranted hope in my judgment.

The other objective is to work toward greater stability, to reduce the amplitude of the peaks and troughs in prices and incomes. Such an objective, which is attainable, calls for more than tinkering, and that is what is here being offered. We missed two good chances for rewriting legislation so as to reduce our reliance on these commodity programs. One was forty years ago during World War II, when a transition could have been made with little difficulty. Another was during the price rise of ten years ago. Now a major change would be more difficult but may be necessary.

* *

There will be new participants in the forum when the 1985 farm bill is debated: people concerned with cost, international trade, small business, conservation, farm structure, and food aid. There will even be some farm commodity groups who have not previously been involved. If a farm bill is to be enacted the views of these people will have to be taken into account. Those who have historically controlled the agenda do not have by themselves enough power to act alone. To many of the agricultural establishment, this sharing of power is looked on with apprehension. To me, it seems to hold promise for a better farm bill.

One additional comment. Some people, lacking relish for a fight on the farm bill, think the problem could be averted by inaction, allowing the existing law to expire and reverting to permanent legislation already on the books. This would be a disaster. Permanent legislation is 35 years old, hopelessly out-of-date, and would strangle us. There is no alternative to tackling this problem head on. There is one thing on which the various parties are agreed. Nineteen eighty-five is the year of decison.

Frank R. Gomme
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Outlook Speech
World Food Grain Situation

World food grain production, including wheat and rice, is projected at a record 966 million ton in 1984/85, up more than 20 million from a year ago. Production increases are being reported for a wide range of both importing and exporting countries. The major exceptions to this year's upbeat production news are another downturn in wheat production in the Soviet Union, and reduced crops in Australia, Argentina, and Canada. World rice production continues its strong growth with China, India, and Indonesia leading the way. However, Thailand is likely to harvest a smaller crop this year.

Food grain utilization in 1984/85 is expected to expand sharply with wheat accounting for virtually all of the growth. The expansion in wheat utilization will be about equally divided between feed and non-feed use. With production of both wheat and rice expected to exceed utilization, year ending stocks of both grains will show a modest increase.

World Wheat Outlook

Total world wheat production

In 1984/85 is projected to exceed 500 million tons for the first time in history. Area devoted to wheat is the fifth largest on record, with average yields at an all time high.

There are several anomalies for this year's wheat crop. Wheat outturn in Argentina, Australia and Canada -- our 3 major competitors for the world wheat market -- is down significantly from a year ago. However, wheat production in the European Community vaulted to a new record in 1984. The EC must decide how to circumvent its self-imposed restraint on exports in order to justify a significant increase in its share of world wheat trade, or face the prospects of a huge addition to stocks.

Wheat area in Argentina, Australia, Canada, the EC, and the United States -- suppliers of roughly 95 percent of the world's exports -- was basically unchanged from the 1983/84 level. A less restrictive program in the United States resulted in a recovery in harvested area from last year, while high farm guarantees and protectionism resulted in

continued expansion of wheat area in the EC. In contrast, adverse planting conditions along with growing season difficulties resulted in less harvested area in Australia, Argentina, and Canada.

The fickleness of mother nature was evidenced in Australia and Canada as 1984 yields were well below last year's exceptional levels. Crop yields in the U.S. slipped slightly below 1983's outstanding level, while Argentina's improved significantly and yields in the EC were phenomenal. Throughout the EC yields averaged over 80 bushels per acre, and in France, the largest producer, averaged around 95 bushels.

Area devoted to wheat in the major importing countries rose about 2 percent in 1984/85, although it was still well short of the 1982/83 level. Wheat area in the USSR increased modestly in 1984/85, but still was significantly below the levels that prevailed over the past decade. Wheat area continues to expand in China, although the rate of increase seems to be slowing. Across the rest of the world wheat area changed little from the level of the past couple of years.

The two most striking yield stories for major importers were in China, where outturn per/hectare hit a new high, and in the Soviet Union, with the second poorest yields in the past decade.

Total potential crop outturn in the major importing countries is expected to increase again in 1984/85 as larger crops in China and Eastern Europe more than offset reduced outturns in Brazil and the Soviet Union. Among the world's other wheat producers, India, Spain, and Mexico have harvested noticably higher crops in 1984/85.

World wheat utilization is expected to break the 500 million ton level in 1984/85 for the first time in history. Total use would be about 15 million ton above last year's level and close to the 1984/85 wheat outturn.

Over half of this year's increase in utilization will be in the feed use category. Total use of wheat for feed is projected at an all time high of 98 million tons, about 10 percent above the year earlier level. The EC and the Soviet Union are expected to utilize more wheat for feed. Because of a record crop in the EC, more wheat will likley move into feed at the expense of domestic barley and imported coarse grains and grain products. In the Soviet Union, a short 1984 coarse grain crop and large supplies of lower quality wheat are expected to result in an increase in wheat feeding in 1984/85.

Despite this growth in feed use, the majority of the world's wheat production is still consumed directly as a food grain. In China, India, North Africa/Middle East, Pakistan and Bangladesh -- which together account for almost 40 percent of world wheat utilization -- consumption (predominantly for human use) will be up an average of 3 percent.

The increase in total wheat use in the developing world has slowed from the levels of the 1970's when it increased an average of 4 percent annually. In recent years, wheat use has grown less than 2 percent annually. A slowdown in production, deteriorating economic prospects, and balance of payment problems have limited these countries ability to import more wheat in order to maintain growth in consumption.

World wheat trade is projected at a record 106 million tons for 1984/85, up significantly from the level of the past 3 seasons when trade appeared to have plateaued at around 100 million tons. The

driving force behind this year's record world wheat trade is a surge in projected Soviet imports to a record 26 million tons, a fourth above the large level a year earlier. Other areas of the world, including North Africa and the Middle East are also seeing an increase in import needs. The United States, the world's major wheat exporter, is expected to capture a significant share of the growth in import demand in these markets.

A number of South American countries are expected to increase wheat imports in 1984/85, with Brazil leading the way. In fact, Brazil's total wheat imports are projected to hit 5 million tons for the first time. Argentina, Canada, and the United States have been active sellers to Brazil in recent months.

The Asian wheat import market is expected to show little if any growth in 1984/85. China's imports are expected to increase only modestly from last year's reduced level as they harvest another large crop. Coming off a record crop and high procurements, India not only will limit imports but may export 1 to 2 million tons. Because of a short crop, Pakistan is likely to significantly increase imports. Most other countries are forecast to have only modest changes in import demand. Large 1984 crops in both Western and Eastern Europe are expected to limit import requirements in these regions.

The sharp upswing in world wheat trade in 1984/85 in conjunction with smaller exportable supplies in Argentina and Canada are expected to prove to be a bonus for Australia, the EC, and the United States. This year's smaller crops and limited stocks are expected to result in a significant drop in exports from Argentina and Canada. This would be the first reduction in July/June trade levels for these countries since 1980/81. In contrast, Australia, with a much improved crop, is looking forward to record equalling exports in 1984/85.

A record 1984 EC crop is likely to be evidenced in an increase in domestic wheat utilization and intense pressure to export. The EC has been an active seller in both traditional and non-traditional markets. Wheat sales to the USSR are already thought to be record large. There are reports of both increased feeding and more wheat going to the starch industry. Prospects for a significant addition to already large stocks will likely result in intense pressure to move supplies into the export market.

EC wheat imports are expected to drop below 3 million tons, while exports are currently projected at an all time high of 18.5 million tons. This is a continuation of a trend that has seen an unsettling swing in EC wheat trade in the area of 20 million tons over the past decade as imports have declined and exports have expanded.

U.S. Wheat Trade Prospects

U.S. trade prospects in 1984/85 include some bright spots. First a record level of world wheat imports this year is good news for the United States as the traditional largest supplier of wheat to the world. Second, record imports by the USSR, primarily a hard wheat buyer, and smaller exportable suppliers in Canada and Argentina should benefit sales of certain classes of U.S. wheat. Third, continued improvement in the world economy may stimulate demand for wheat, and fourth the recent slowdown in the strengthening of the dollar could improve the U.S.'s competitive situation.

However not all the news is good. World wheat trade, excluding the USSR will be flat this year. Growth in world wheat utilization continues to be depressed. Significant quantities of wheat have been traded as feed the the past couple of year's, however with a large 1984 U.S. corn crop this trade in wheat as a feed may shrink. Trading difficulties with China continue to limit prospects for U.S. sales. The record 1984 EC wheat crop and its disposal continues to cast a veil of uncertainty over the world wheat market.

World wheat stocks are projected at over 100 million tons for the second consecutive year. At nearly 105 million tons, wheat stocks at the end of the 1984/85 marketing year would be equivalent to 21 percent of utilization, or slightly above the average stocks-to-use ratio of the past decade. The United States is expected to continue to hold around 40 percent of the world's wheat stocks. Canada, Australia, and the EC will account for more than 30 percent .

Wheat Prices Strengthen

Numerous factors have influenced the path that world wheat prices have traveled so far this season. The tight world coarse grain situation and movement of significant quantities of wheat into feeding kept world wheat prices fairly strong as the 1984/85 harvesting season approached. However, as new crop wheat supplies from the northern Hemisphere started to trickle in and production appeared to be good, world wheat prices began to adjust to the availability of new crop and to the 10 percent reduction in the United States loan rate. But the early season slide in wheat prices was short lived as the USSR entered the world wheat market for massive amounts of wheat. Since harvest time low, wheat prices have strengthened, as evidenced by HRW export quotes, which hit a low of $147 per ton in July and are now at around $154 per ton.

U.S. Market Share Erodes

As an exporter and competitor in the world wheat market the United States faces a number of disturbing trends. One is the decline in U.S. exports and market share, a phenomenon which has been at least temporarily reversed in 1984/85. Prospects for attractive and reasonable returns from wheat exports have encouraged a significant expansion in wheat area by the major competitors. Their farmers have also reacted to this expanding demand by intensifying the use of production inputs, consequently average yields have moved progressively upwards. On top of this, a number of countries, faced with increasing costs of imported wheat and domestic financial difficulties have reemphasized domestic production or permitted the growth in wheat consumption to slow.

Probably the most striking development has been the steady decline in EC wheat imports and the emergence of the community as the world's second largest wheat exporter in 1984/85. High producer guarantees both inside and outside the EC have contributed to this major shift in the EC's role in the world wheat market. This switch has enormous cost associated with it -- in budgetary expenditures to EC members for farm supports and export subsidies and also to other suppliers in the form of lost markets.

The above developments have been reflected in the United States in the form of lost export markets, the need to hold large areas of land out of production, a depressed farm sector and significant government program costs.

A Look Ahead; If The Trend Continues

If these trends continue, the major wheat competitors could add up to 10 million tons to their export potential in the next 3 to 5 years. Even smaller exporters will continue to encourage production and export surplus supplies when convenient.

In recent year's world wheat trade, excluding China and the USSR, has grown on average close to 2 million tons a year with the strong growth of the 1970s slackening in the 1980s. On average, import demand for these countries will have to expand faster than the recent trend if world exportable wheat supplies are not to become even more burdensome. If recent trends in wheat utilization outside of the two major centrally planned countries—China and the USSR are reviewed,--it becomes apparent that 70 to 80 percent of the annual average increase in wheat consumption has come from domestic production with only around 20 percent of the average growth covered by imports. Also the level of Soviet and Chinese wheat imports have been major uncertainties. Since 1979/80, Soviet wheat imports have averaged over 17 million tons annually and have trended upward, while China's wheat imports have averaged nearly 12 million and have been on the decline. A continuation of large Chinese wheat crops could result in only modest growth in Chinese wheat imports and a break in the string of poor Soviet wheat crops could result in a decline in USSR's imports from current levels.

Given these assumptions, world wheat trade over the next 3 to 5 years could be in the area of 110 million tons,--not significantly above the 1984/85 level. The alarming part is that the U.S. share of this trade, given prospective developments in the major competitors and the EC, could be significantly below the dismal 38 percent of world trade we had in 1982/83. If the outlook for U.S. wheat exports is to improve, some, if not all, of these recent trends must be changed.

A Look Ahead; Another Possibility

A more pleasant scenario is the one where the U.S. is in a better competitive stance in the world market place. A situation where a strong dollar is not inhibiting U.S. exports; where world wheat prices are not so attractive that everyone wants to produce wheat for the export market; and where assured supplies of wheat at attractive prices result in a resumption of the growth in world wheat consumption and trade.

A more competitive posture on the part of the U.S. and a more market oriented domestic farm policy could result in a number of adjustments in the future trade situation. For example, the trend of increasing wheat area in the major competitors and the EC would slow and maybe even halt. If returns from the export market were less attractive and domestic markets were not able to absorb the excesses,

the pressures of excess supplies at the farm might discourage production increases based on higher yields. This would slow the growth in surplus production in the next 3 to 5 years and lessen pressures to export.

World wheat utilization also could be expected to expand more rapidly as importing countries shift their policies to allow greater import dependency and as wheat becomes a more attractive feed ingredient, and other uses particularly industrial demand expand.

The recent annual average increases in wheat utilization of around 10 million tons would be a base to build from, and with wheat a more attractively priced item in world commerce, the tendency for countries to meet 70 to 80 percent of their annual consumption increases with domestic production would be less.

A larger world import market accompanied by an improvement in the U.S. competitive position could return the U.S. wheat industry to the position of imminence that it enjoyed during the 1970s.

World Rice Outlook

World rice production in 1984/85 is forecast at 313 million tons (459 million rough basis), the fifth record crop in a row. Among the major exporters, China's production is forecast to be up sharply, crops in Burma and Pakistan are expected to show a slight increase, and Thailand is projected to record a significant decline in outturn. On the import side, record crops are expected in Brazil, Indonesia, and the Republic of Korea. In Bangladesh, production is forecast to be down sharply from last year's record level, and India will also record a significant decline in production after a record crop in 1983/84. U.S. milled production will rebound to 4.5 million tons (6.4 million --rough basis) in 1984/85 following a much reduced outturn in 1983/84 which was caused by government programs and adverse weather.

World rice ending stocks are projected to increase in 1984/85, but this increase primarily reflects stock building in India, Indonesia, Japan and the United States. Ending stocks for the rest of the world will continue to fall as economic conditions inhibit imports by developing countries and force further reductions in domestic stocks.

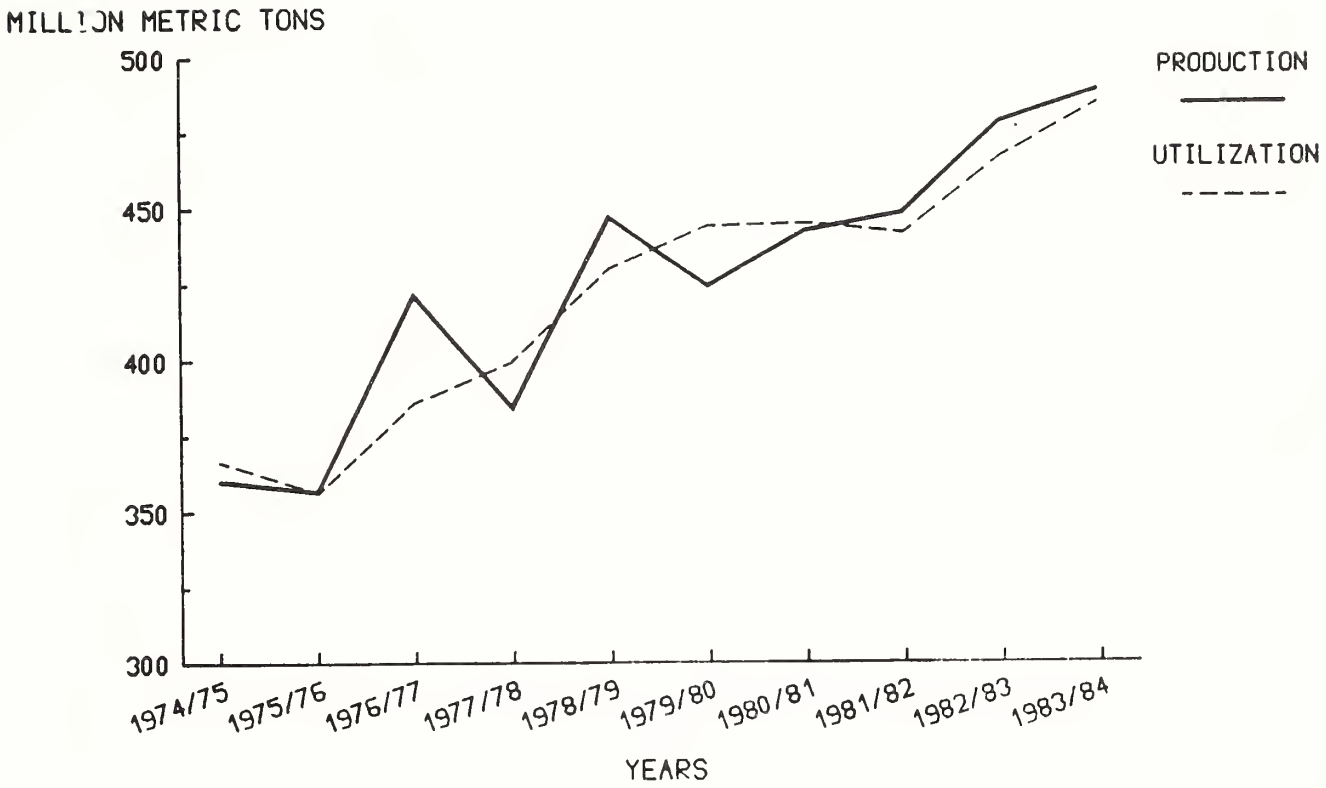
World trade is projected to fall sharply during the 1984/85 marketing year. Good crops in many countries --Indonesia and the Republic of Korea in particular-- coupled with poor economic conditions in several other markets --most notably Nigeria, will hold world trade far below the 1983/84 level. Despite a projected smaller crop, Thailand is expected to continue to be an aggressive exporter in 1984/85 and exports should reach at least 3.9 million tons.

The loss of the Nigerian market and the continued absence of the Republic of Korea from the U.S. marketplace will hurt U.S. sales again in 1984/84. The recent devaluation of the baht will also put further pressure on traditional U.S markets in South Africa, the Middle East and Western Europe. As a result, U.S. exports could fall to 2.0 million tons.

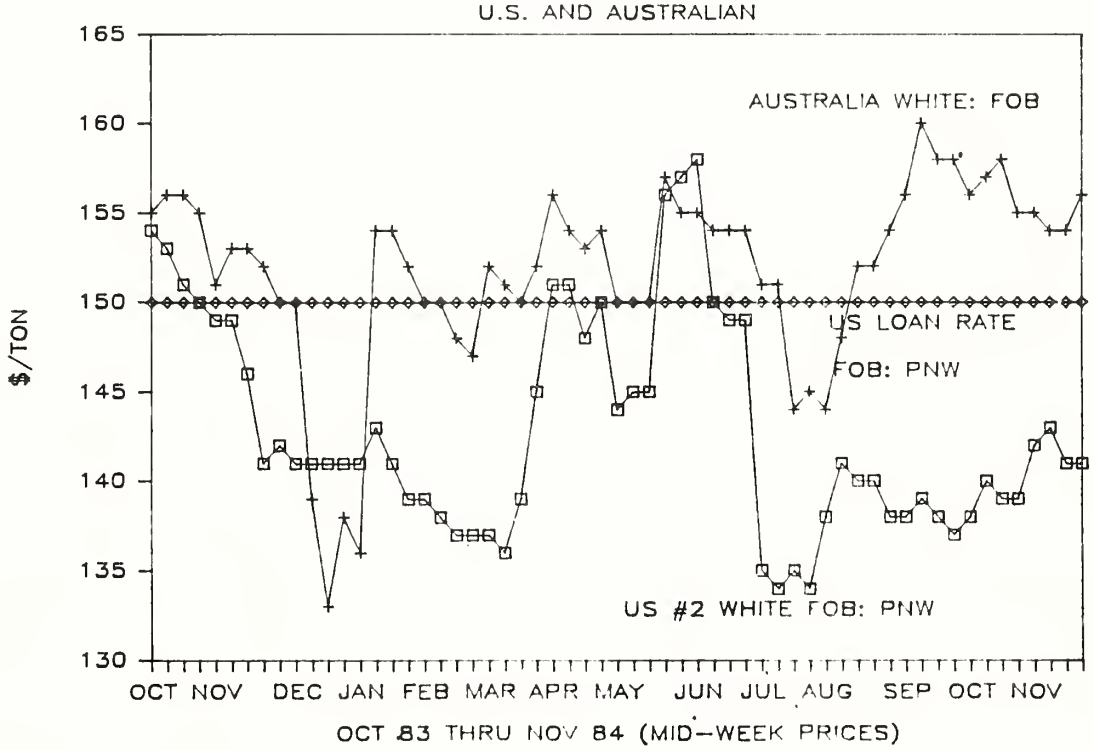
WORLD WHEAT PRODUCTION

COUNTRY/REGION	1981/82	1983/84 PRELIM.	1984/85 PROJ.
	MILLION TONS		
UNITED STATES	75.8	65.9	70.0
AUSTRALIA	16.4	21.9	18.0
ARGENTINA	8.3	12.0	10.7
CANADA	24.8	26.6	21.0
EC -10	54.4	59.3	74.7
CHINA	59.6	81.4	85.0
USSR	80.0	78.0	75.0
INDIA	36.3	42.8	45.1
OTHERS	93.0	101.2	106.2
TOTAL	448.6	489.1	505.7

WORLD WHEAT PRODUCTION AND UTILIZATION
10 YEARS ENDING 1983/84



WHITE WHEAT EXPORT PRICES
U.S. AND AUSTRALIAN



OCT 83 THRU NOV 84 (MID-WEEK PRICES)

WORLD WHEAT AND FLOUR TRADE

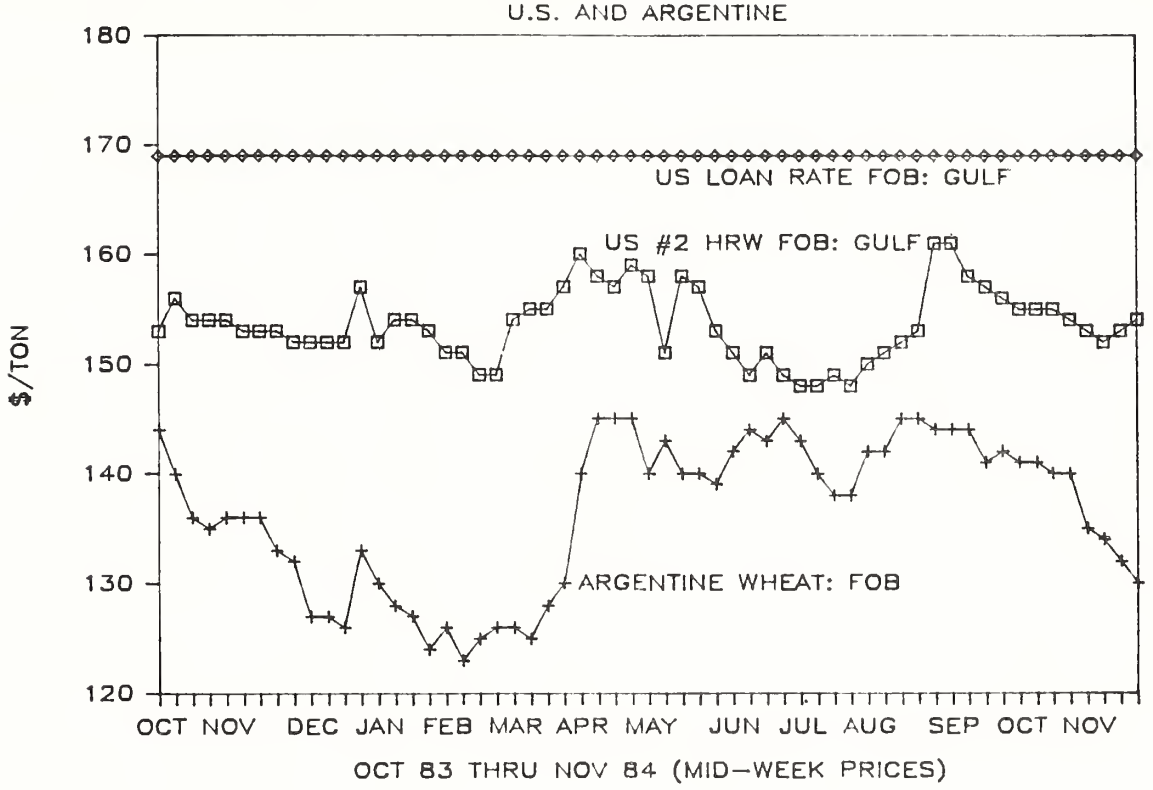
JULY/JUNE MARKETING YEAR

	1980/81	1981/82	1982/83	PRELIM 1983/84	PROJ. 1984/85
	MILLION TONS				
EXPORTS					
U.S.	41.9	48.8	39.9	38.9	41.5
CANADA	17.0	17.6	21.4	21.8	17.2
ARGENTINA	3.9	4.3	7.5	9.6	6.5
AUSTRALIA	10.6	11.0	8.1	11.6	15.0
EC-10	14.7	15.5	15.5	16.0	18.5
SUB TOTAL	46.2	48.4	52.5	59.0	57.2
OTHER	6.0	4.1	6.1	5.2	7.1
TOTAL	94.1	101.3	98.5	103.1	105.8
IMPORTS					
EC-10	4.5	4.7	3.8	3.6	2.7
MID. EAST & N. AFRICA 1/	9.5	9.7	9.2	13.0	14.0
EGYPT	5.6	5.8	5.4	6.4	6.8
MEXICO	1.2	.9	.1	.6	.1
INDIA	.1	2.3	3.7	2.5	.1
E. EUROPE	5.9	6.3	4.6	4.1	3.2
CHINA	13.8	13.2	13.0	9.6	10.0
USSR	16.0	19.5	20.2	20.5	26.0
OTHER	37.5	38.9	38.5	42.8	42.9
TOTAL	94.1	101.3	98.5	103.1	105.8

1/ ALGERIA, MOROCCO, TUNISIA, IRAN, IRAQ AND NIGERIA.

HARD RED WINTER WHEAT EXPORT PRICES

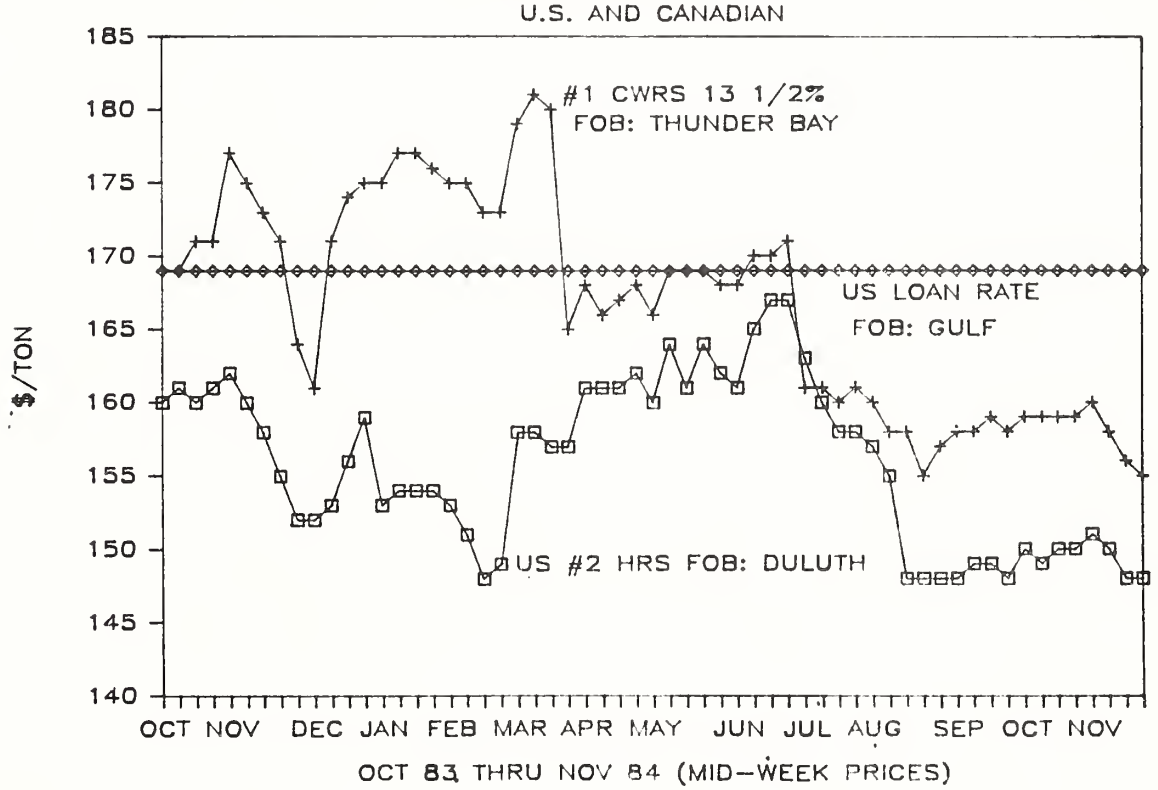
U.S. AND ARGENTINE



OCT 83 THRU NOV 84 (MID-WEEK PRICES)

HARD RED SPRING WHEAT EXPORT PRICES

U.S. AND CANADIAN



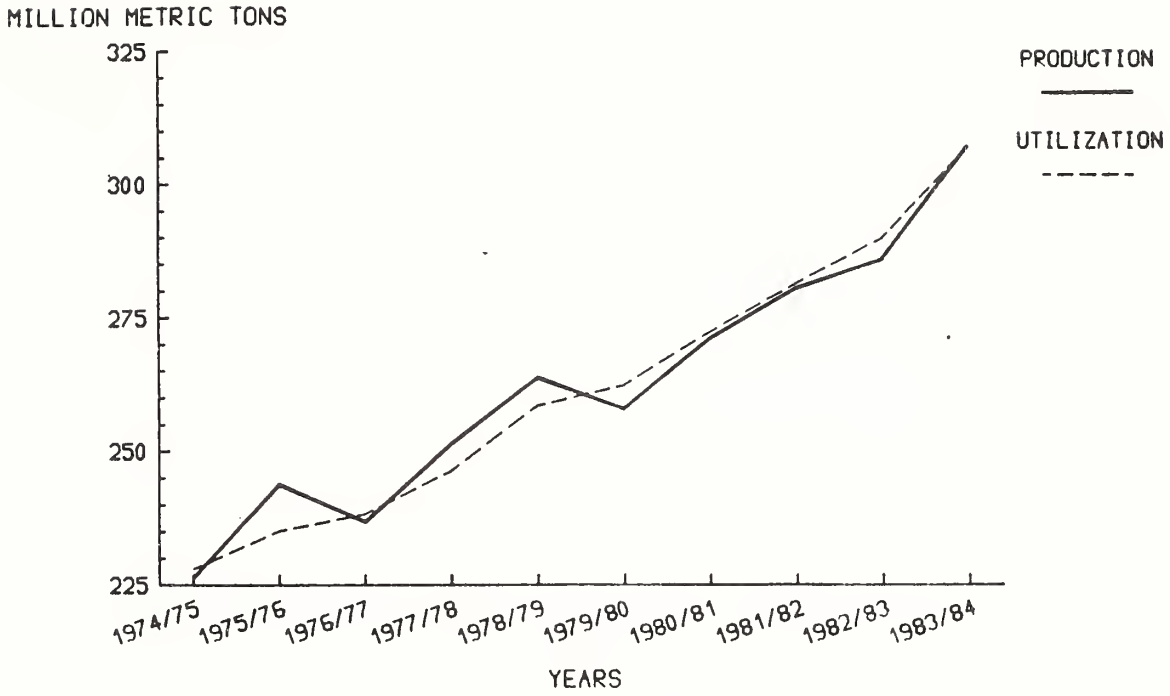
OCT 83 THRU NOV 84 (MID-WEEK PRICES)

WORLD RICE SITUATION 1/

	Calendar 1981	Calendar 1984	Calendar 1985
	Million Tons		
Production			
India	80.5	89.7	87.8
China	139.9	168.9	175.0
Thailand	17.4	19.3	17.5
Indonesia	29.7	35.2	36.5
Pakistan	4.7	5.2	5.3
United States	6.6	4.5	6.4
TOTAL	399.0	451.3	459.5
Utilization	272.4	307.0	311.3
Stocks			
United States	.5	1.5	2.1
Foreign	21.5	15.7	16.8
Exports			
Thailand	3.0	4.4	3.9
Burma	.7	.8	.9
Pakistan	1.1	1.2	1.1
United States	3.0	2.2	2.0
Other	5.3	3.9	3.7
Imports			
Korea	2.3	--	--
Nigeria	.7	.4	.5
Indonesia	.5	.5	.4
Other	9.6	11.6	10.7
TOTAL WORLD TRADE	13.1	12.5	11.6

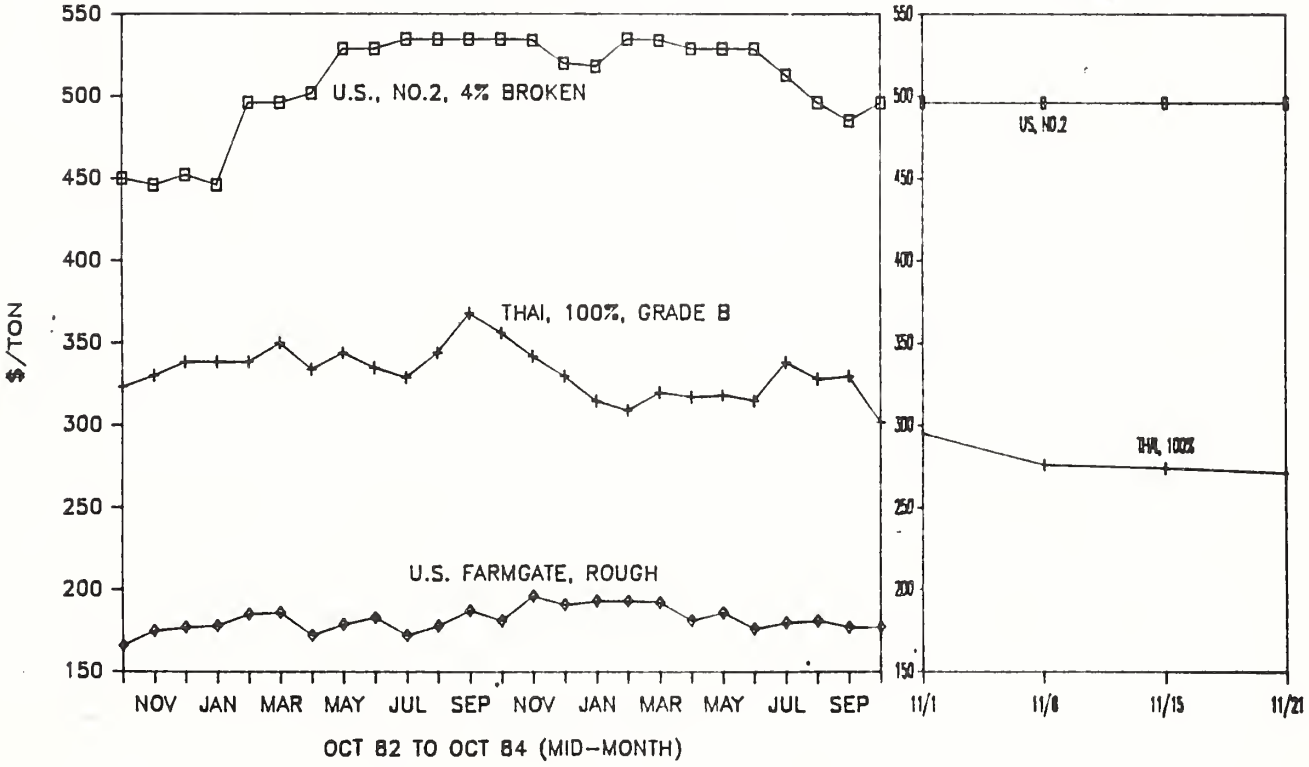
1/ Production rough basis; other items milled basis.

WORLD RICE PRODUCTION AND UTILIZATION
10 YEARS ENDING 1983/84



RICE PRICES

US AND THAI C&F ROTTERDAM AND US FARM



MID-WEEK PRICES

NOVEMBER

DOMESTIC WHEAT OUTLOOK

OUTLOOK '85

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Annual Agricultural Outlook Conference
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The U.S. wheat market in 1984/85 has production plus beginning stocks of nearly 4 billion bushels--the third consecutive year of such supplies. In 1985/86, supplies could again be around this level. This paper focuses on two related issues: 1) the likely pattern of wheat prices between now and next fall and 2) the factors that will once again keep supplies near the record high in 1985/86.

Market Overview

The 1984 crop--the third largest ever-pushed 1984/85 supplies to 3.97 billion bushels, a marginal 35 million bushels above last season (table 1). Total use is expected to rise by about 50 million bushels, leaving projected carryover stocks on June 1, 1985, about equal to stocks at the start of the season, 1.4 billion bushels.

The expected rise in use is predicated on an expected near 100-million-bushel rise in 1984/85 exports (figure 1). Last season, feed use was responsible for the demand growth as exports declined to the lowest in three years. This season, feed use is expected to drop moderately, despite strong feed use during June-September 1984. Critical determinants of feed use are 1) the wheat/corn price ratio, 2) free supplies of feed grains relative to wheat in livestock consuming areas, and 3) livestock numbers, especially cattle on feed. During this summer the wheat/corn ratio of farm prices averaged 1.07, the lowest since June-September 1971, and free supplies of corn relative to wheat were extremely low. Between now and next summer, the large amount of farmer-owned reserve and CCC wheat stocks will cause free supplies of wheat to be much tighter relative to corn and the wheat/corn price ratio could average above 1.2. Although next summer's price ratio could move back down to between 1.1 and 1.15, free supplies of wheat will remain very tight relative to corn. Consequently, wheat feed use will likely provide little demand strength for the rest of 1984/85 and 1985/86 and could range between 250 and 300 million bushels next summer, 20-30 percent below this summer.

Table 1.—Wheat Market

Item	1983/84	1984/85
	Million acres	
Planted area	76.4	79.5
Harvested area	61.4	66.2
	Bushels per harv. ac.	
Yield	39.4	38.8
	Million bushels	
Beg. stocks	1,515	1,398
Production	2,420	2,570
Supply 1/	3,939	3,973
Food use	635	645
Seed use	101	97
Exports	1,429	1,525
Feed and residual	376	325
Total use	2,541	2,592
Ending stocks	1,398	1,381
FOR	611	625
CCC-owned	188	435
Free	599	321
Avg. farm price ($/bu.)	3.54	3.35-3.55

1/ Includes imports.

Major determinants of prices

The major determinant of season-average farm prices is the strength of exports relative to the size of supplies (figure 2). When exports accounted for 40 percent of supplies or better, farm prices have been comfortably above the loan rate. Last season, exports fell to 36 percent of supplies and prices averaged about a dime below the loan rate. Without the loan option, prices would have been sharply lower. This season, the combination of large first quarter exports providing expectations for higher seasonal shipments and a lower loan rate suggest an average price slightly above the loan rate. The midpoint of the forecast range for 1984/85 is plotted in figure 2.

Feed use is omitted from figures 1 and 2, because feed use cannot create a bull market for wheat. In the past few years, feed use has been reactionary; when wheat prices are sufficiently low relative to corn, wheat feed use has expanded sharply. Statistical analysis for recent years suggests a 10-percent change in the wheat/corn price ratio can change wheat feed use in the opposite direction by 15 percent or more. However, when wheat prices rise, feed use can evaporate quickly. It is a force that will cushion a drop in wheat prices, but it will not help sustain high wheat prices. Feed use will likely continue in this role and not be a source of much price strength in the forseeable future.

Are free stocks tight enough to move prices?

Free stocks (including stocks under regular CCC loans) on June 1, 1984, are expected to be 321 million bushels, nearly 50 percent below a year earlier. Except for 1982/83, this would be the lowest level of free carryover stocks since the mid 1960's (figure 3). The circled years in the figure--1978/79-1980/81 and 1983/84-1984/85--are years when, at some point, farmer-owned reserves were released to the market either because the release price was reached (the three early years) or because of PIK entitlements (the two later years). Free stocks were probably low enough in late 1982/83 to have caused prices to reach the release level had there not been certain knowledge that free stocks would expand dramatically because of PIK entitlements during 1983/84.

This year's expected significant drop in free stocks and the lack of PIK entitlements in 1985/86 lead to the question: will wheat prices strengthen in the coming year more than what would be expected from average seasonal increases? To answer that, consider the average seasonal pattern during 1978/79-1983/84 (figure 4). Keeping in mind that seasonal price patterns for wheat are very unstable compared with other crops, such as corn, quarterly average farm prices have ranged from 98.3 percent of the season-average price in the first quarter of the season to 102 percent or more in the second and fourth quarters. Assuming a $3.45-a-bushel average farm price and these quarterly adjusters would give a $3.39 first quarter price, about what actually prevailed, and $3.53, $3.48, and $3.51 for the subsequent quarters. However, despite the tighter free stocks, October-December prices have been running about a dime below this average seasonal pattern.

A further examination of potential price movements is provided in figure 5. The average quarterly seasonal pattern for a $3.45-a-bushel season-average price--the same as in figure 4--is shown. In addition, the figure shows two sets of forecasts from a large-scale quarterly econometric model for wheat which was constructed in the Economic Research Service. The lower set of forecasts is based on the historical relationship between quarterly farm prices and total stocks. It shows wheat prices falling sharply in the third and fourth quarters. The higher forecasts are from the same model, except that the forecasts are based on a relationship between historical prices and free stocks, rather than total stocks. The point is that even if the tight free stocks materialize, history indicates that this season's prices are likely to average in the lower half of USDA's forecast range of $3.35 to $3.55 a bushel.

There are two major reasons why, despite stronger exports and tighter free stocks, any sustained price strength seems unlikely. First, the very heavy early season export sales suggest lagging demand during the remainder of the year. Exports for October-May are forecast to be 61 percent of the season's shipments, compared with 65 percent averaged during the last 4 years. This pattern gave higher-than-expected price strength during June-September 1984 and will likely provide weaker-than-average prices for the rest of the year. The second reason is the possibility of another large crop in 1985. The model solutions show a June-September 1985 price of $3.33 a bushel, based on an expected 1985 crop of 2.6 billion bushels.

Program Participation in 1985

The outcome for the 1985 crop will hinge on program participation and yields. The 1985 wheat program is a combined 20-percent acreage reduction program and a 10-percent cash diversion program. The target price remains at $4.38 a bushel and the regular and reserve loan rates remain at $3.30. The announced expected deficiency payment rate is $1.08 a bushel--the maximum--and the cash diversion payment rate is $2.70 a bushel.

From a farmer's viewpoint, program attractiveness can be measured by focusing on the potential production that must be given up when participating in the program. The participation decision is partly made on the basis of a comparison between the net returns that could be earned on each of these bushels, if they were produced, and the program payments earned for each bushel foregone. Table 2 shows the program payments--deficiency, diversion, and PIK--per bushel given up as a result of participating in the different program options since 1982. The calculations use average program yields and expected harvested yields. The benefits rose sharply in 1983, which combined with weaker price expectations, pushed participation to 77 percent. In 1984, the final program provisions continued to be attractive (except for PIK), but enrollment fell to 61 percent. This drop was a consequence of the program provisions not being final until April 1984. The late announcement and the less attractive PIK (exacerbated by imposition of the payment limit) caused expected market returns from harvesting the crop to rise relative to program payments. The late announcement also came after most production expenses had already been made. In 1985, expected program payments will be slightly more attractive than in 1984, and expected market prices may not be much different than they were at signup for the 1984 program. This suggests higher participation, likely increasing to 70-75 percent.

Several additional factors should be considered, table 3. Comparing market prices with program payments suggests no clear advantage of the 1985 program over 1984. However, the early announcement can allow farmers to avoid more production costs and thus increase net returns from participation. The advance payments and poor weather this fall should also raise participation. Although haying and grazing provisions on idle land in 1985 are not quite as attractive as in 1984, lower expected soybean prices should boost participation in soft red areas. Loan rates, target prices, and the binding contract remain unchanged.

Harvested area could rise slightly in 1985

Assuming a final compliance rate of 70 percent, a very early projection of harvested acreage can be made. The wheat base of program compliers would be 66 million acres, 70 percent of the total estimated base of 94.3 million (table 4). Maximum permitted plantings of compliers would be 46.2 million acres, 70 percent of the compliers' base acreage. Compliers harvested between 89 and 95 percent of their maximum permitted plantings between 1982 and 1984. Assuming they harvest 93 percent in 1985, harvested area by compliers would total 43 million acres.

Noncompliers' base acreage at 30 percent nonparticipation would total 28.3 million acres. Over the last 3 years, they have harvested between 87 and 110 percent of their base acreage. The 110 percent came in 1983 when noncompliance was small. Noncompliers in 1983 were often farmers who had over planted their base and, with good yield prospects, went on and harvested rather than comply. Assuming noncompliers harvest a more typical 90 percent of their base in 1985, their harvested acreage would total 25.5 million. Total harvested acreage then would add to 68.5 million.

Based on changes in participation from the 70 percent rate and weather, a reasonable range of harvested acreage may be 66-71 million acres. A 5-percentage-point change in participation would change the harvested acreage projection in the opposite direction by 1.3 million acres.

Implications for the 1985 Wheat Market

A very rough set of outcomes for ending stocks on June 1, 1986, can be developed by using the rough acreage projection of 68.5 million derived above (table 5). Selecting 3 levels each for exports and yields, which likely cover the range of estimates by most analysts, 9 alternative supply and use tables can be derived. At this early juncture, an export estimate of 1.3-1.5 billion bushels and a U.S. average yield estimate of 37-39 bushels per harvested acre would seem to be leading candidates. These levels would likely result in feed use estimates ranging from 240-340 million bushels and carryover stocks of 1.4-1.7 billion bushels (boxed area, table 5).

If carryover stocks were to rise in 1985/86 from this season's expected 1.4 billion bushels, farm prices next summer would be pinned near the $3.30 a bushel loan rate. Even with large forfeitures to the CCC, price strength would be limited. This scenario is consistent with the econometric model data shown in figure 5. They were based on 1985 production of 2.6 billion bushels (68.5 million acres times 38 bushels an acre). The announced 1985 expected deficiency payment rate of $1.08 a bushel, the maximum, is also reflected in the potential 1985/86 supply/demand/price outlook developed here.

FIGURE 1 -- WHEAT OVERVIEW

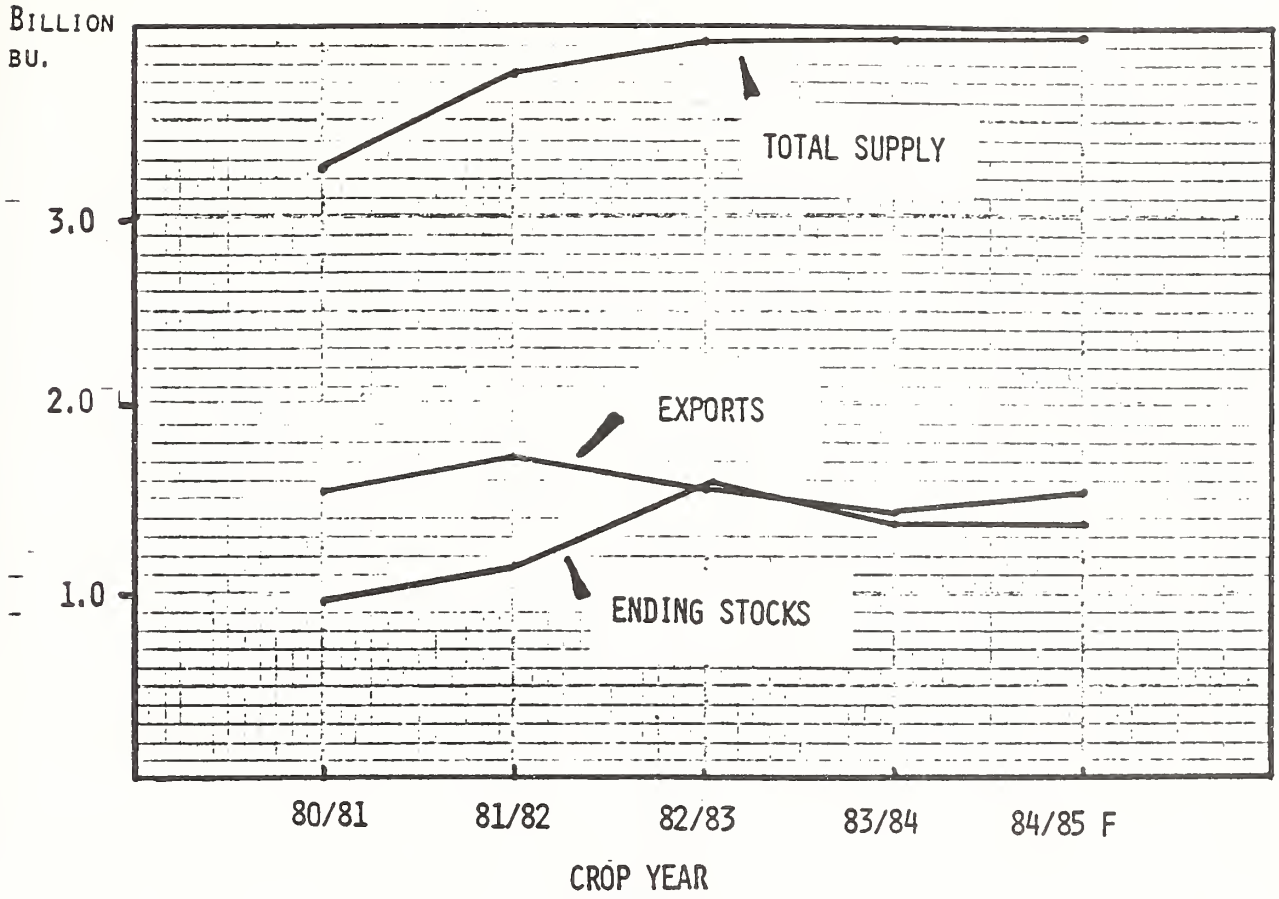
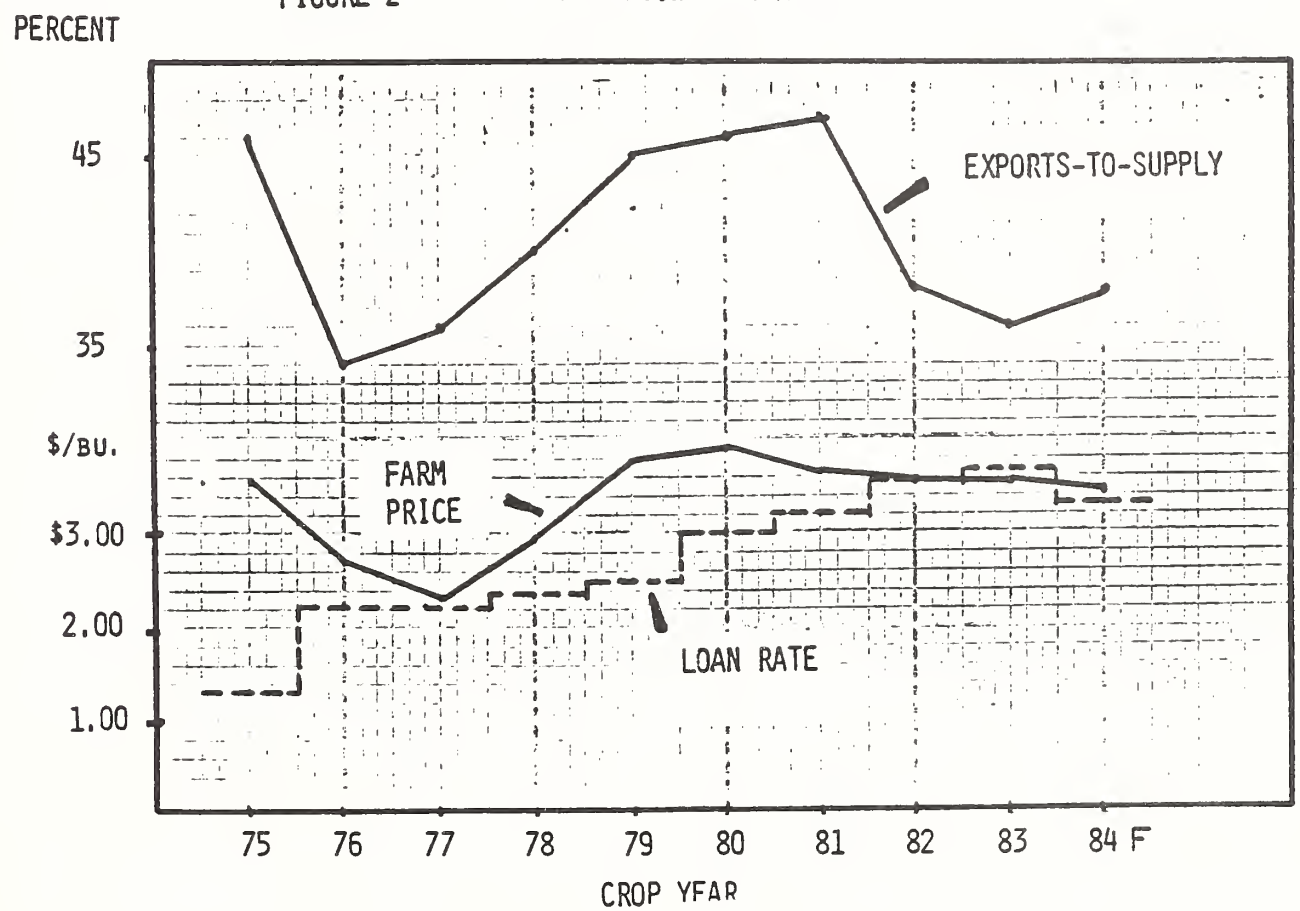


FIGURE 2 -- WHEAT PRICE INDICATORS



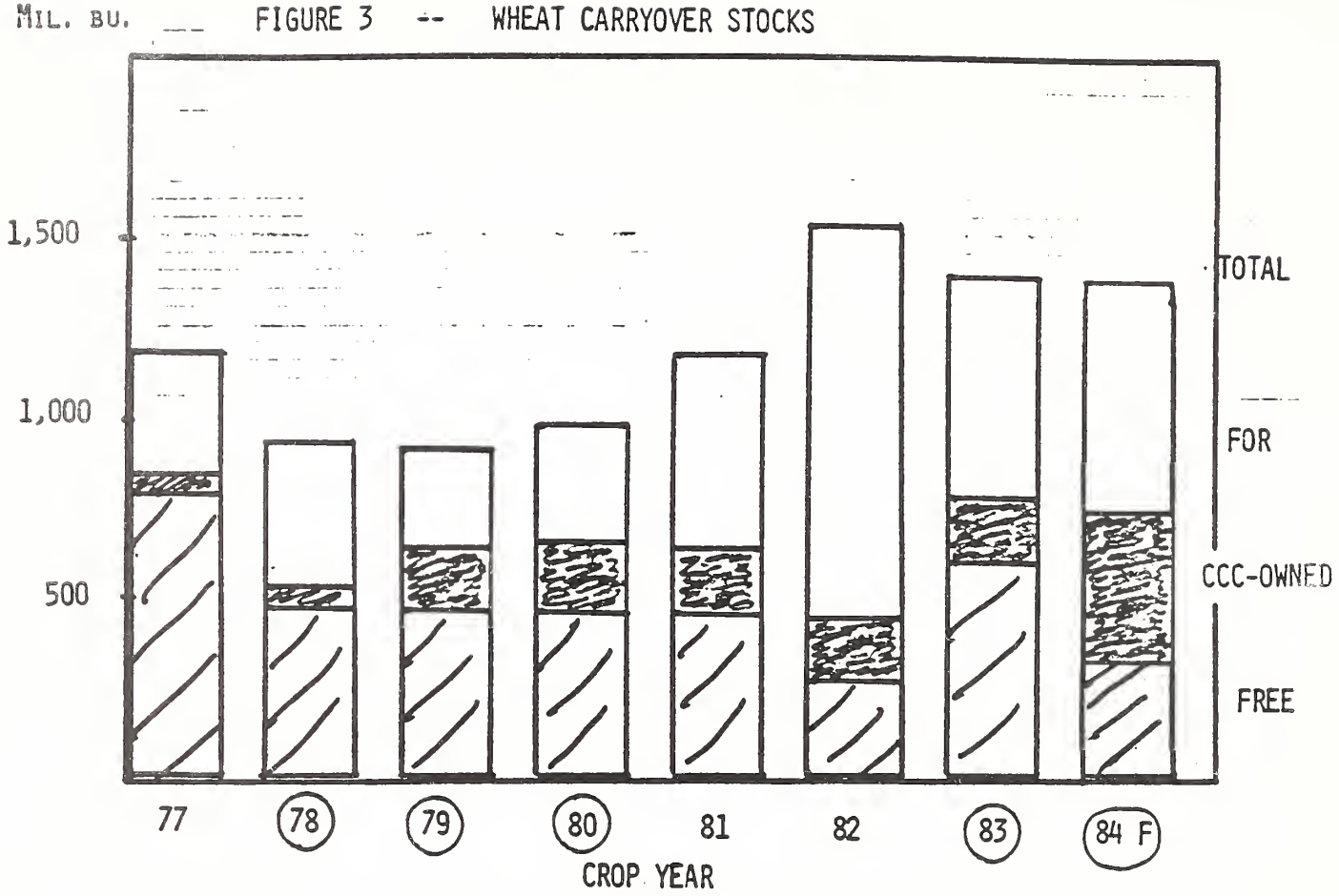


FIGURE 3 -- WHEAT CARRYOVER STOCKS

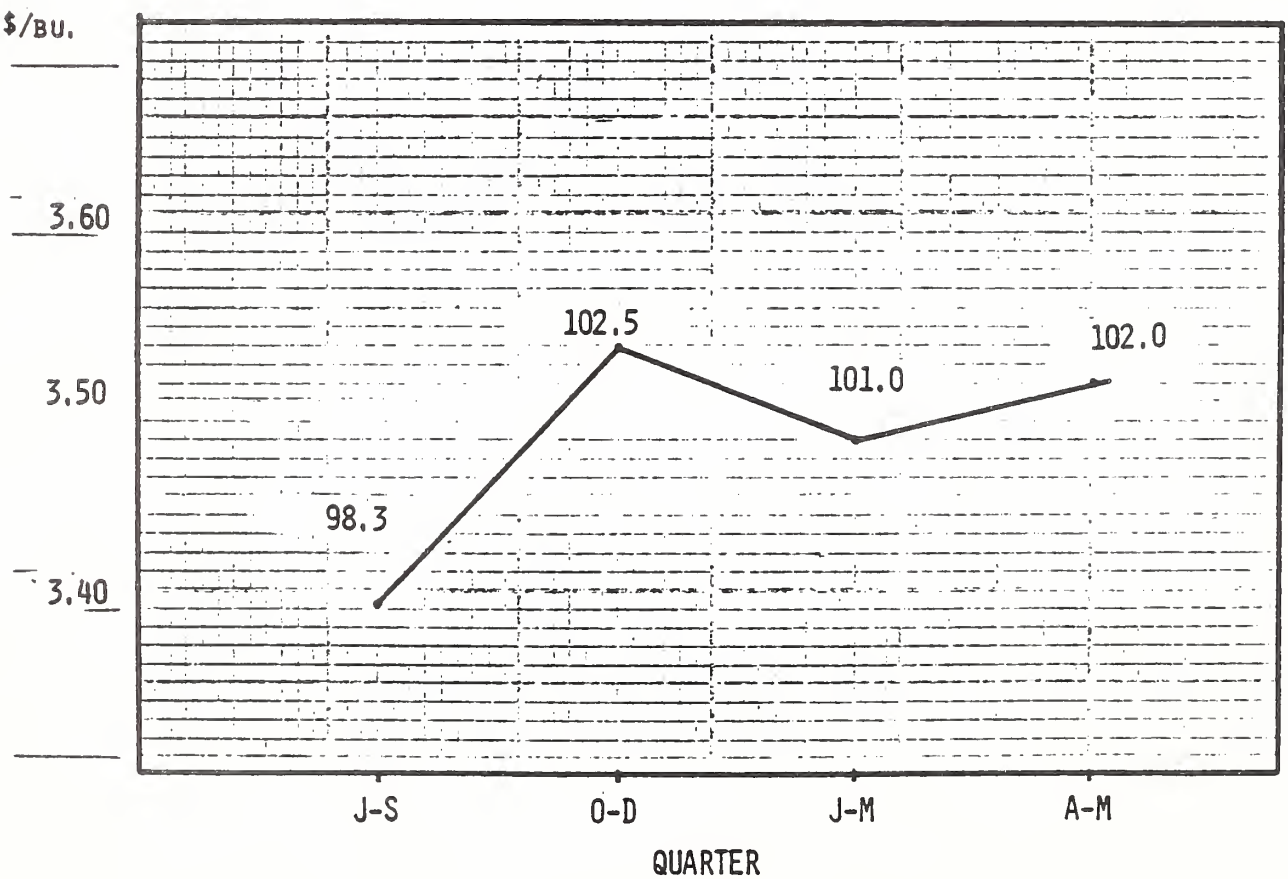


FIGURE 4 -- WHEAT PRICE SEASONALITY FOR $3.45 FARM PRICE 1/

1/ SEASONAL PATTERN OF 1978-83

FIGURE 5. QUARTERLY WHEAT FARM PRICES

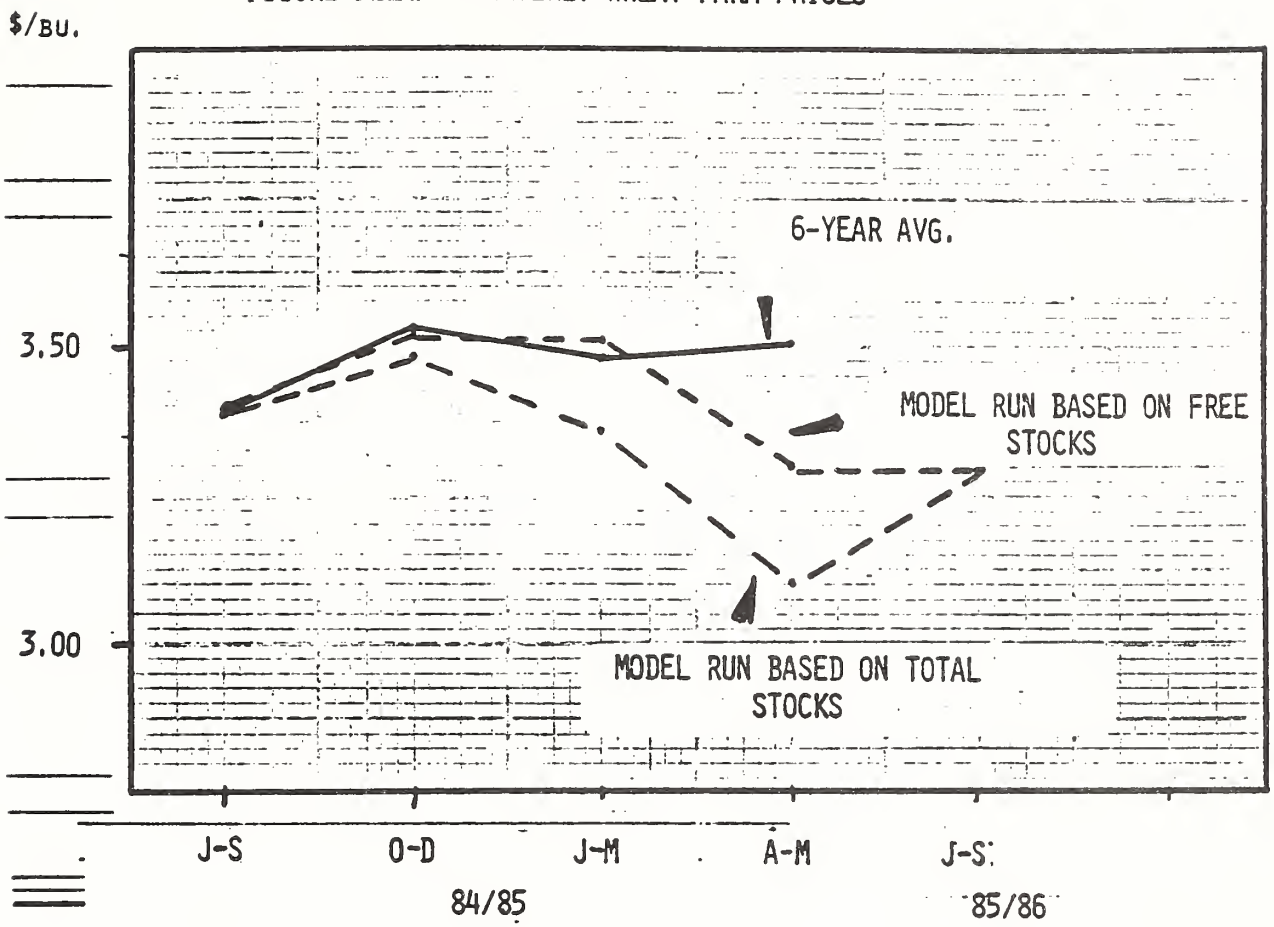


TABLE 2. WHEAT PROGRAMS

	PROG. PAYMENTS PER BU. NOT PRODUCED ($)		PARTICIPATION (%)
1982	15-ARP 2.16		48
1983	15-ARP/5-CLD 3.12	30-PIK 2.68	77
1984	20-ARP/10-CLD 3.15	20-PIK 1.82	61
1985 F	20-ARP/10-CLD 3.25		70

TABLE 3. PARTICIPATION CHECKLIST

	ADVANTAGE	
	1985	1984
EXP. PAYMENTS PER BASE ACRE	—	—
EARLY ANNOUNCEMENT	✓	—
ADVANCE PAYMENTS	✓	—
WEATHER THUS FAR	✓	—
HAYING AND GRAZING	—	✓
OTHER CROP PRICES	✓	—
LOAN RATES	—	—
TARGET PRICES	—	—
BINDING CONTRACT	—	—
ADVANTAGE	✓	—

TABLE 4. HARVESTED ACREAGE

	COMPLIERS	NONCOMPLIERS	TOTAL
		- - MIL. AC. - -	
BASE	66.0	28.3	94.3
MAX. PERMITTED PLANTINGS	46.2	-	-
HARVESTED	43.0	25.5	68.5
ACR	18.4	-	18.4

TABLE 5. CARRYOVER ALTERNATIVES (HARV. = 68.5 MIL. AC.)

EXPORTS (BIL. BU.)	YIELD (BU./AC.) 35	37	39
1.3	1.4	1.6	1.7
1.5	1.3	1.4	1.5
1.7	1.1	1.2	1.3

A PRODUCER'S VIEW

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Vice President, Minnesota Assn. of Wheat Growers

Annual Agricultural Outlook Conference
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For Release: Tuesday, December 4, 1984



As I was arranging my travel to Washington, and observing lines of people planning travel overseas, I recalled many articles in newspapers and magazines proclaiming the windfall for U.S citizens who can now travel abroad, because the strong dollar has made traveling overseas so much less expensive. I wonder though, how many people stop to think what this bargain for the relatively affluent is costing the United States economy.

Speaking from a producer's point of view, I can only share President Reagan's words. The farm sector has not shared in the recovery.

The President, being a fair man, wants all American's to have a fair chance to succeed. Under the present conditions, it will not happen. Agriculture will not prosper. Fewer than ever will survive. Agriculture, for the most part, is not asking for the moon, they are only asking for a chance. A chance to succeed at what they do best. Agriculture is best at producing and transporting products. Agriculture is best at providing the nation with high quality food at very reasonable prices. Agriculture is best at feeding the hungry people of the world. Agriculture even provides a decided military advantage in this unstable world. Agriculture is best as the support system for 22% of the nation's jobs.

The major reason for the gloomy outlook is the high rate of interest.

1. It drives domestic producers' and agricultural businesses' costs far too high.

2. It is making the dollar so strong, producers and exporters are non-competitive in the international trade arena.

When we talk of federal deficits and the budget, I know there are those who only advocate tax increases. There are those who only tolerate spending cuts, but agriculture needs a compromise. Compromise isn't such a bad word--our forefathers used it a lot. The worst thing that could happen to agriculture would be a stand-off where no one does anything--keeping the status-quo. Then there would be little hope for agriculture. Any farm program would be largely academic, and certainly costly, and ineffective.

1. Mandatory programs with high supports would deprive U.S. of production, but support foreign expansion. A $4.00 loan would equate to about $5.20 in Canada.

2. A market-oriented program cannot expect buyers to pay $5.86 when our producers sell at $3.40. We will only be residual suppliers, or collectors of bad accounts.

We have long been promised the export market and access to new markets. President Nixon made a commitment to export. He presided over detente resulting in the Soviets, for a period in the late Seventies, and again now, becoming the largest customer for U.S wheat in the world. Likewise, that period saw the reopening of relations with the People's Republic of China, which also has become a major market for U.S wheat. In addition, the currency devaluations that were implemented during that period also had a direct impact on the competitiveness of the U.S. in the export market.

Please allow me to quote:

"The health of our economy is also tied to agriculture. American agriculture, taken as a whole, is an industry so vast that it stretches the imagination -- with assets exceeding $1 trillion, employing 23 million people, 22 percent of America's labor force.

> And we aren't just feeding ourselves. Today, wheat harvested on the Great Plains is eaten as pasta in Italy. Our soybeans are part of the soy sauce used in the Orient. Our cottonseed is pressed into oil and shipped to Venezuela. Our grain is consumed in Russia, and African children are fed by the tillers of Nebraska soil.
>
> In 1982, our agricultural export revenue was five times what it was in 1970. Today, two of every five agricultural acres are devoted to exports and over one-fourth of all farm income comes from sales overseas. Our agricultural exports use rural elevators, grain terminals, railroads, canals, seaports, ships, barges, and warehouses. It's a vast network, incredibly efficient and providing income for tens of millions of people and feeding many millions more."

These are the words of the President of the United States, March 21, 1983.

The President called our agricultural system "a national treasure." He said, in that Ag Day presentation, that with the cooperation of Secretary Block, Trade Representative Brock, and all relevant agencies and departments, he'd try to increase farm income by opening markets and introducing creative alternatives, in order to overcome excessive surpluses. He said, "we believe in free trade, but we are no longer going to play patsy for those who would use this commitment as leverage against us. Free Trade," the President said, "means access for those trading with us and it also means access for Americans to their markets. It's got to be a two-way street or no deal."

The doom-sayers of the middle-to-late Seventies, who warned we would run out of food are very quiet, at least for the time being. But where too, are those who said we were going to have the export market to rely on to provide the incentives to continue to produce and feed the world's hungry people?

It has been said repeatedly that we, as U.S farmers, are among the most efficient grain producers in the world, aided by a very efficient marketing and transportation system. Despite this, however, today we are not the most competitive sellers. The level and rigidity of the U.S price support programs are often pointed to as the reasons for our non-competitiveness, but lowering the loan, in itself, is too simple and too easy a solution for a problem so complex that it renders most policy-makers helpless.

Our real problem is the huge federal deficit which places tremendous pressure on the demand for money and maintains interest rates for farmers and for other sectors of the economy at very high levels.

High interest rates increase cost of production, and lower prices received by farmers. Last year, the President himself said that with farm debt at about $200 billion, a one-percent increase in interest rates would reduce net farm income by $2 billion. The impact of interest rates is now even greater as farm debt has increased to $225 billion, as much as the combined national debts of Brazil, Mexico, and Argentina--all considered "basket-cases" of world economies.

A recent survey by Farm Credit Services of sixteen counties in the Red River Valley showed that for the average farmer, a one point decrease in interest rates, would be equivalent to receiving nine cents a bushel more for the crops he produces. If we could lower interest rates from the current 14-15% down to 9-10%, it would mean as much as 45 cents per bushel for the average farmer. For the more highly leveraged producers interest payments equated to 13-1/2 cents per interest point. Dropping interest rates from 15% to 10% would mean 67-1/2 cents more per bushel to these highly strapped producers. Interest rates must come down. It is imperative that we get back to single-digit rates.

Our Treasury Secretary, Donald Regan, fathered one of the more infamous statements at the Governor's meeting last Spring, when he said high interest rates did not impact on agriculture because interest

charges were deductible. Mr. Regan made the false assumption that farmers were making money and paying taxes, but, furthermore, he showed a strange understanding of how the U.S. economy functions interacted with international trade.

High interest rates paid by manufacturers and suppliers of machinery and farm inputs increase their costs, which are passed on to producers in the form of higher machinery and input costs. Moreover, as most purchasers of farm products must hold them as inventory, higher interest rates tend to depress the prices offered to farmers for their products, which, in turn, brings on further stagnation for the agri-business sector.

High interest rates too, are a double-edged sword. A one percent increase in interest rates reduces purchasing power of third-world countries by $4 billion, with more of their money going for interest payments and not for purchases of needed agricultural products. In addition, high interest rates attract a flow of capital to the U.S., which is currently running at an annual rate of $60 - $80 billion a year, compared to only $11 billion annually two years ago. This inflow of capital not only bids up the value of the dollar, it is $60 -$80 billion that is not available to less developed and other countries for development programs to generate income which eventually could increase cash purchases of agricultural imports.

It is true the strong dollar makes imports into the U.S less expensive, including the oil and petroleum products that gave us such difficulties during the Seventies. But petroleum, like grain and most other commodities in the international market, is traded for dollars, and, therefore, the strong dollar makes petroleum products expensive for all other importing countries. This is a foreign exchange cost, on top of the interest debt, and further reduces a nation's ability to expand its appetite for imported goods, including agricultural products.

The impact of a strong dollar on our exports and on the stimulation of increased production in other exporting countries just cannot be over-emphasized. Comparing the U.S. dollar to a basket of

currencies of major trading partners, the dollar is worth 35% more than at the start of 1982. This has had a dramatic effect on our prices in the export market. For example, in 1980, when the export price for No. 2 Hard Red Winter wheat at the Gulf was $4.74 a bushel, the real price to importers was $4.16, 58 cents a bushel less. However, in August of 1984, when the export price of that same wheat was $4.18, the real price to importers was $5.86, $1.68 more. One third of the entire U.S. soybean crop is sold to Europe. In 1982, for West Germany (our best customer) a bushel of soybeans, at six dollars, cost 10.2 marks. In 1984, that same bushel at six dollars cost 18.1 marks--an 80% increase in two years.

For the first five months of 1984, the dollar is up 59% against the German mark, 138% against the Finnish markka, 32% against the Japanese yen, 100% against the Hong Kong dollar, and 24% against the Brazilian cruzeiro. Our farmers are having difficulty living on $3.40 wheat, but our customers, too, are having difficulty paying for our wheat because of its inflated value caused by our strong dollar.

What does the strong dollar mean for the Canadian farmer? In 1983, when the U.S. price support loan rate for wheat was $3.65 a bushel, this equated to $4.32 per bushel in Canadian dollars to the Canadian producer. In 1984 the U.S. lowered the loan for wheat to $3.30, but because of adjustments in the currency exchange, the Canadian farmer still received $4.32 a bushel for the wheat he produces. This not only signals the Canadian farmers to increase production, it also provides an additional margin for the Canadian Wheat Board to negotiate with in order to under-bid the United States in third-country markets at a cost to the U.S. taxpayer.

The European Economic Community is also now attempting to export wheat without the use of export restitutions or subsidies because the export prices, which result from the strong dollar, are very comparable to the high internal price structure within the Community. This will save the EEC treasury millions of dollars and allow them to continue their high domestic prices which call for increased production within

the Community for export in competition with the United States. It is the U.S. farmer then, that is paying the price for high interest rates and a strong dollar.

We have seen reduced volume and value of U.S. agricultural exports. While Canada has enjoyed record exports of grains and oilseeds achieving its goal of 30 million tons two years ahead of its schedule, U.S. exports of grains and oilseeds have dropped from 150 million metric tons, to 130 million tons. Our market share of wheat exports has dropped from 47 percent to 38 percent. Likewise, the value-of-the-dollar incentive has stimulated similar actions to Canada's on the part of other exporting countries.

The other exporting nations also have the benefit of bilateral agreements. The Canadian Wheat Board has sold about two-thirds of its wheat crop before the Canadian farmer even moves his drill into the field. Australia and Argentina also have sold about one-half of their crops before harvest begins. The U.S. then, finds itself in the unenviable position of trying to fit the lion's share of the available export stocks into a diminishing share of the world's available free markets.

Bilaterals are giving Canadians an advantage. With a short crop, like they have this year, most, if not all, of their crop is already sold. With the bulk of their crop sold under bilateral agreements, they can be comfortable in promoting increased production and rifle shot their excess into targeted U.S. markets by undercutting U.S. prices. Their Wheat Board, with the assistance of the exchange rates, gives the Canadians the latitude to undersell us, and expand into our markets, without a market development program or a reserve program of consequence, all at a loss of U.S. producer developed markets, and at a cost to the U.S. taxpayer.

Decision-makers continue to call agriculture a cost program, but remember what it has been called upon to do. Agriculture has been called on to bear the brunt of embargoes in the name of consumers for lower food costs, when, in fact, exporting creates jobs for U.S. workers, and is a benefit program. Agriculture was called on to pay

the price for the United States' misdirected efforts to drive the Russians out of Afghanistan. Now, through the high interest rates and the strong dollar, agriculture and other export sectors, are being called on to provide, in effect, a subsidy program for the international banking community.

I ask you, what would happen in other sectors of the economy, if they were to bear the burden that has been placed on our farmers? We already know, don't we? Manufacturing has been moving overseas at a loss of jobs for U.S. workers. Foreign labor, coupled with favorable exchange rates, encourages imports of manufactured goods back into the United States to compete with those firms which chose to stay, reducing even further the jobs for our people, or at the very least, calling for protectionism, whether it be steel, textiles, autos, or whatever.

According to Murray Weidenbaum, this is one of the reasons why automobiles cost consumers 40% more now than 4 years ago. That's one of the reasons we trade $50 million of textile imports for $550 million of wheat exports when the textile industry is running at 90% of capacity, and one of the reasons the steel industry cries in desperate anguish.

The magnitude of the problem was stated recently by Milton Eisenhower when he referred to the 12-1/2 million people out of work, 25,000 bankruptcies, and nearly a $100 billion trade imbalance.

Obviously, agriculture is an industry we don't close down and move overseas and export goods back into this country, because the land is here and is non-transferable. Each year we raise a new crop to be exported to still-hungry people in the world, requiring the use of barges, railroads, trucks, shippers, and the grain trade; and most of these people will be called upon to move fertilizers and chemicals back to the farm so we can plant and do it all over again next year. But with all the baggage it is forced to carry, our agriculture is growing weaker. What will happen then, to our country if agriculture--if this support system--this heart of our economy is not there to sustain us?

Many of the costs charged to the farm program perhaps would not have been necessary if agriculture would not have been asked to shoulder such a large burden. Cuts in support for this ailing industry then, must be reviewed cautiously.

The real issue should not be the cost of the farm program. It is U.S. fiscal policy that is so dramatically out of line resulting in the problems that exist in agriculture today, including the high cost of the farm program. An economist at Oklahoma State University, Dr. Luther Tweeten, projected recently, that with a sound fiscal policy, interest rates in the U.S. would be 7 percent, not 13 to 15 percent. The value of the dollar would be 20 percent lower, allowing U.S. farm exports to increase by 15 percent.

Chase Econometrics also agrees there would be a significant impact. Francis Vyttebrouk, International Economist for Chase Econometrics Associates in Brussels, said if the value of the dollar dropped 20%, the European Common Market would lose $15 billion in world-wide exports. If we, then, undertake measures to return to a sound fiscal policy and reduce our deficits, we will have taken a large step toward agriculture regaining its health.

Donald Regan has said too, that a strong dollar is not a problem for exports. I believe if Mr. Regan implemented what he espouses, he would feel differently. If he were in a bank that charges 17% interest, instead of 13 or 14%, he would find himself a residual supplier of loan funds, or the keeper of a lot of the bad accounts. Is the United States any different now, especially as far as agriculture is concerned?

We must have what has been promised to us--a commitment to export. An important part of this is a sound fiscal policy, and equally as important, is a sound and aggressive trade policy with the tools, such as credit programs, available in the interim to offset the negative effects of our fiscal policy, until that too can be brought into line.

A movement away from narrow-visioned protectionist efforts, which are taking place even in this Administration, is a must, in favor of a movement toward the open access to markets as promised by President Reagan almost two years ago. The protection of steel, automobiles, textiles, etc., whether mandatory or voluntary, is seriously harming U.S. agricultural markets. We have reached the stage now where even our friends find it advantageous to have the U.S. remain the residual supplier, holding stored grain over the U.S market place, reducing prices for all--buyers and sellers alike. As I indicated earlier, other exporting countries have the advantage of having up to two-thirds of their production assured for export through bilateral agreements. We, therefore, should examine coordinated export programs, including supply guarantees and credit, offered as complete packages through bilateral agreements with importing countries to increase and maintain U.S. market shares of foreign nation imports.

We cannot forget, however, that export programs must benefit producers, as well as the trade and others. Agricultural programs designed to increase exports should not just colonialize producers. Producers, as well as the agricultural support system that they carry, are entitled to a profit.

In summary, from both a domestic and export perspective, the federal deficit must be controlled. Interest rates must come down, and with it, the currency relationship between the purchaser and the seller must equalize or virtually every government agricultural program will render itself costly and ineffective.

Agriculture is the largest industry in the United States, which means agriculture is the largest industry in the world, which should make agriculture the largest industry in the history of the world. Agriculture then, must influence monetary and fiscal policy. Any fiscal policy that doesn't lower interest rates dramatically works against agriculture and the export sector affecting domestic costs and international trade.

Agriculture must unite and must stand and demand the resignation of any cabinet officer who believes that high interest rates and an inflated dollar do not harm trade and the agricultural economy, or else we have no choice but to look to higher supports and be content to be a residual supplier or produce for the domestic market.

No, I am not calling for Donald Regan's resignation. We will work with whomever is there, but a producer selling for three dollars, when the purchaser pays almost six dollars, would seem harmful to the trade and exporters. Anyone who says it isn't harmful should have to prove otherwise. This is what agriculture and other traders should question, to the point of resignation, no matter who the cabinet official.

I find it puzzling that we ask consumers to pay 40% more for their automobiles to support that industry while they make their transition to modernization, but, while modernizing agriculture and its support system, agriculture is being asked to pay high interest rates, thus decreasing net worth and losing jobs within their support system. Isn't a job in agriculture just as important as a job in a factory? We need to debate this point. The steady economic growth the nation enjoys today is coupled with a three to five percent inflation rate while agriculture absorbs a ten-fifteen-thirty percent and even, perhaps, more deflation. Is this totally fair?

THE WORLD COARSE GRAIN SITUATION AND OUTLOOK

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Annual Agricultural Outlook Conference
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For Release: Tuesday, December 4, 1984

The global coarse grain situation from the summer of 1983 through this past summer has been both exciting and frustrating, especially for those of us involved in forecasting. And this marketing year will be equally interesting, but for different reasons. In 1983/84 global output dropped dramatically--by over 11 percent--the largest decline in recent history. In 1984/85 Soviet grain imports may set a record. Changes in output, total supplies, feed use, trade, ending stocks and prices have been dramatic in recent years and are likely to remain so for at least another year. The situation and outlook by supply and demand categories will be discussed below, concentrating on major factors of special interest this year, such as the Soviet grain situation and the European Community's grain surplus.

Supply Situation and Outlook

World coarse grain output this year is forecast to set a record, but to rise only 1.4 percent above the 1982/83 level. However, this year's production may be more than 14 percent above 1983/84's depressed level. The distribution of output changes has varied by categories of countries.

Coarse Grain Production

	1982/83	1983/84 Estimated	1984/85 Projected
		Million tons	
World	778.7	689.4	789.3
United States	250.7	136.7	232.7
Total Foreign	528.0	552.7	556.7
Major Exporters	56.8	57.7	63.3
Major Importers	263.0	273.7	270.1
Other Foreign	208.1	221.3	223.2

Foreign output has continued to rise in recent years with an almost 5 percent gain in 1983/84 while U.S. output plummetted. This year foreign output is forecast up again. Continuing increases are being made by foreign exporters as a group as well as by other foreign countries excluding major importers. The biggest contributor to increases in the other foreign countries category is China, which this year has seen an almost 12-million-ton rise in total coarse grains, mostly corn, after a 9-million-ton increase last year. However, in the category of major importers, crop output has varied in recent years. Despite a huge increase in production forecast for non-EC Western Europe, major importers as a

group may have a more than 1 percent drop in output this year. This decline is due to a sharp drop in expected Soviet output, down 20 percent in 1984/85.

Production In Major Foreign Exporters

	1982/83	1983/84 Estimated	1984/85 Projected
		Million tons	
Canada	26.5	21.0	21.9
Argentina	18.2	17.9	18.5
South Africa	4.5	5.2	10.0
Australia	3.9	9.3	8.0
Thailand	3.8	4.4	4.9

Output in the major foreign exporters has varied among the 5 countries. Canadian barley output dropped from its record 1982/83 level last year and this year as yields fell. In contrast, Australian barley production rose last year from the 1982/83 recent low and likely will fall somewhat in 1984/85 but reach the second highest level. South Africa may recover from the drought which kept output in 1982/83 and 1983/84 at only 40 percent of output the previous 5 years. But, output of the major competitors combined rose last year and is expected to rise even more this year. The main gain this year will be from a more normal South African crop. It will not be harvested until spring 1985 and, with low domestic supplies, South Africa is not likely to export much during the current U.S. marketing year. Thus, the supply situation in major foreign exporters will benefit U.S. exports this year. Exports in major competitors are highly correlated with output in contrast with the United States.

Demand Situation and Outlook

The major use of coarse grains is for livestock and poultry feed. All other uses--food, seed, and industrial--account for about 40 percent of global use and have risen slightly in recent years. In foreign countries non-feed uses account for a somewhat higher percentage, but still less than half of total coarse grain use. For corn, slightly over half of foreign use is non-feed categories combined, as corn is an important food staple in many developing countries. Also, use of corn for industrial starch and as an additive in gasoline is important.

The level of use of coarse grains in animal rations and the share by individual grain is a function of grain production and prices, and livestock numbers and profitability. Feed grain usage can rise either with larger animal numbers or with higher grain feeding rates per animal.

Feed Use of Coarse Grains

	1982/83	1983/84 Estimated	1984/85 Projected
		Million tons	
World	461	444	453
Foreign	322	326	327
Major Importers	238	242	241

Global feed use of coarse grains dropped last year and is expected to pick up in 1984/85 to its third highest level. This global decline was because of the drop in U.S. use in 1983/84. In contrast, foreign feed use grew last year and may rise marginally this year, though it may fall slightly in the major importers, as a projected decline in the USSR more than offsets expected higher use in the European Community.

Production changes will have a major impact on feed use patterns this year both in the United States and abroad. A record barley crop in the European Community will likely have several results--increased feeding of both coarse grains and wheat despite lower animal numbers and reduced imports. In contrast, in the Soviet Union a much lower output of coarse grains may cause a drop in coarse feeding and large imports necessary to maintain total grain feeding at last year's level in the face of record livestock inventories. The U.S. situation and outlook will be detailed in another paper.

In addition to domestic output, changes in the number and composition of animals will influence use levels in individual countries. About 40 percent of foreign feed use is in the USSR and the European Community. Soviet animal numbers have continued to increase and are at record levels for all categories except for sheep and goats. (See attached table) Some slowdown in Soviet livestock production growth is anticipated during the first half of 1985, but barring a particularly severe winter, no serious disruptions in the livestock sector are anticipated. In the European Community, however, recent policies to reduce the dairy surplus have caused a decline in dairy cattle numbers. Total grain consuming animal units in the EC may be down by 1-2 percent in 1984/85. However, the 24 million-ton-gain in total grain output in the EC this year has depressed domestic prices and may result in higher feeding rates per animal. Thus, animal numbers and total coarse grain feeding may go in opposite directions in the two major foreign coarse grain feed users this year.

An interesting pattern to watch in 1984/85 is shifts between grains used as animal feed. Corn, sorghum, barley and oats will not only be competing against each other but also against wheat. Wheat feed as a share of total coarse grains fed has risen in the past 2 years in the European Community, but has vacillated in the Soviet Union and in foreign countries as a group. Availability and relative prices of grains have induced shifts in feed rations in many countries, impacting not only on domestic use but also on trade patterns for grains.

Feed Use of Major Grains By Major Countries

	United States	USSR	European Community	Total Foreign
			Million Tons	
Corn				
1982/83	114.9	16.0	17.9	144.7
1983/84	94.6	20.0	17.0	141.7
1984/85	101.6	24.0	16.8	147.3
Total Coarse Grains				
1982/83	139.6	68.0	53.7	321.6
1983/84	117.3	82.0	49.4	326.4
1984/85	125.3	78.0	50.0	327.4
Wheat				
1982/83	5.3	45.0	15.3	83.4
1983/84	10.2	34.0	20.0	79.8
1984/85	8.8	39.0	22.0	89.7

Trade Situation and Outlook

Global trade will likely be up sharply this year following sizable declines in 1981/82 and 1982/83 and near stagnation in 1983/84. As the attached table shows, world trade on an October-September year (excluding intra-EC trade) is expected to reach almost 100 million tons, the second highest level. Several changes have taken place this year and last year which have impacted on trade flows. Among importing countries some of these changes include:

- o reduced imports in recent years by the European Community and other Western European countries. In fact, the EC is expected to become a net coarse grain exporter for the first time in 1984/85.
- o reduced Chinese imports in 1983/84 and likely low import needs this year compared to the 1.5 to 2.5 million tons imported the 2 previous years.
- o the switch of South Africa to a net importer last year and this year.
- o the large variations of Soviet coarse grain imports in recent years, ranging from 23.5 million tons in 1980/81 (October-September) to 11 million in 1982/83.
- o increased import needs of North African countries, especially this year.
- o import swings by Mexico which took 7.2 million tons in 1982/83 and is forecast to import 4.7 million in 1984/85.

- the continued expansion in Japanese imports, while Taiwan reduced imports in 1983/84 and is likely to rebound this year, but the Republic of Korea may see a another decline.

Demand for imported feed grains was related in all those countries to changes in domestic production and animal numbers, which in turn are influenced by financial and economic factors affecting grain and livestock prices and consumer demand for meat. The continuing rise in global trade from the mid-1970's to the end of the decade was reversed with declines through 1983/84. However, this year will likely see a rebound.

Several interesting factors have impacted on the distribution of exports in recent years:

- declines in Canadian barley exports paralleling crop problems and allowing export levels at the minimum of current long term agreements.

- swings in Australian barley exports.

- the virtual absence of South Africa as an exporter in 1983/84 or 1984/85 (October-September) as drought plagued last year's crop and this year's crop to be harvested in the spring of 1985 will be used first to rebuild stocks.

- large EC barley exports with total coarse grain exports expected at 6 percent of the world total.

- the emergence of China as a corn exporter.

Foreign Factors Affecting U.S. Trade

Because of the various changes in foreign supply and demand conditions last year and this year, U.S. exports have benefitted. Despite high prices in 1983 and reduced world exports, U.S. coarse grain exports rose and filled the gap caused by lower shipments from several competitors. Corn exports, which fell last year, are forecast up for the world, the United States, and foreign exporters this year. Sorghum exports rose for both the United States and competitors last year and are expected to remain at about the same levels in 1984/85. Barley exports will continue to increase this year for competitors and the United States alike as they did in 1983/84.

Some specific factors and policies which could depress U.S. exports this year and in coming years include:

- the impact of the huge EC grain crop this year on their export and import levels and future domestic trade policies. Large barley and wheat supplies in the EC are encouraging higher use of domestic output for feed and starch purposes as well as higher prospective exports. EC imports have continued to drop for several years and exports of both wheat and barley will likely rise following the 20 percent grain output gain in 1984/85. Even with larger forecast exports, coarse grain ending stocks will rise to near-record levels and total grain stocks will significantly

exceed previous levels. In assessing potential EC competition, it is important to look at wheat as well as barley. The current situation is one of relatively low EC export subsidies because of depressed domestic prices and the high value of the dollar.

- o surplus corn supplies in China and their emergence as a supplier of corn to other Asian countries which are basically U.S. markets. The continued crop increases over the last 3 years affects China's standing as both as importer and an exporter.

- o the return of South Africa as a major exporter towards the end of the current October-September coarse grain trade year and into next year.

- o the actual distribution between grains imported by the USSR and their sources of supply this year, and any changes in needs, animal rations or policies next year.

- o demand factors such as a continued strong U.S. dollar, potential rise in interest rates, foreign debt constraints, and overall economic growth abroad, which could reduce foreign demand for U.S. exports.

In contrast there are a number of positive factors which appear to outweigh the negative ones this year:

- o heavy Soviet imports so far and forecast record grain imports for the year. As of November 15th, sales and shipments combined of U.S. corn to the USSR for the 1984/85 marketing year were 8.3 million tons. The attached table shows the sharp annual changes in Soviet coarse grain output, feed use, and imports in recent years, as well as the continued rise in animal numbers.

- o continued imports from South Africa this year, though considerably below last year.

- o reduced Canadian barley supplies and increased corn import needs again this year.

- o lower corn, barley, and sorghum prices this year and a more favorable coarse grain: wheat price ratio. The likelihood of lower coarse grain prices next year.

- o recent positive macroeconomic factors--drop in interest rates, some decline in value of dollar, and outlook for improved global economic and financial situations in many countries in 1985.

- o low stocks in foreign countries. Forecast 1984/85 ending stocks are below 6 of the last 8 years for foreign countries excluding the USSR.

The Future

The current outlook is one of relatively low ending stocks, with an 11.2 percent expected global stocks to use ratio in 1984/85--lower than all but 4 of the last 25 years. Ending stocks are low in foreign countries as a group and foreign countries excluding the Soviet Union and in a number of individual countries, with the notable exception of EC countries. However, the future outlook may be one of larger coarse grain supplies and increased competition from other countries and from other grains. Supply growth may be enhanced by emerging biotechnologies which increase yields of corn and other coarse grains. However, yield gains in feed wheat varieties will also likely continue to be made, increasing the competition among grains. Such increases are already taking place in a number of countries and are likely to increase, especially in the United States, the European Community, and Australia.

Global demand for coarse grains and annual changes will continue to be driven by the number of animals and feeding rates per animal. The number of animals is a function of meat demand and overall economic conditions, while feeding rates are influenced by technology. Thus, the increase in total feeding is not likely to rise by as much as animal numbers or meat demand as feed to meat conversion ratios decline with improved feeding technology and/or the increased production of meat from animals which already have low conversion ratios--poultry. It is expected that global meat demand will rise in the 1980's but at a lower rate than in the 1970's. However, growth in demand for feed grains may rise in those markets which are increasing commercialization of feeding operations with the greater use of concentrate feeds. The largest regional increases in per capita meat consumption over the next 10 years are expected to be in high income North African and Middle Eastern countries and East Asian countries, with notable growth expected in the Soviet Union and China. In the developing countries economic growth and financial conditions will be the major factor affecting meat and feed grain demand. Soviet coarse grain use and imports will be affected by policies concerning meat output growth and by any changes in feed rations among the grains and between grains and protein meals. China will likely be a market for imported coarse grains in the future as meat output expands to increase protein consumption in that country. However, internal transportation and storage constraints in the near future may enable China to export substantial quantities of corn in some years. Other demand factors affecting future use of and imports of coarse grains include import policies affecting wheat versus coarse grain preferences and use of long-term grain agreements.

COARSE GRAIN TRADE

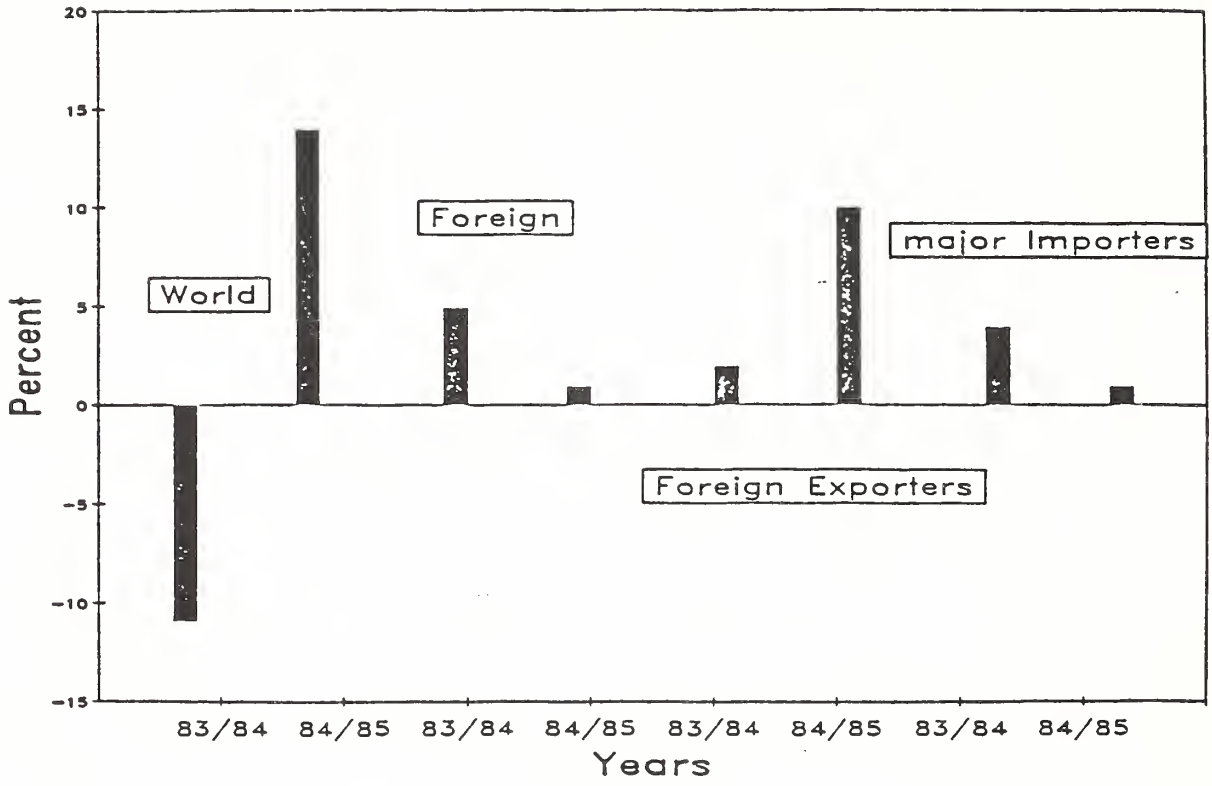
(OCTOBER-SEPTEMBER YEAR)

	1982/83	1983/84	1984/85 FORECAST
	MILLION TONS		
WORLD	91.3	90.9	99.9
FOREIGN	37.3	35.2	38.6
U.S.	54.0	55.7	61.3

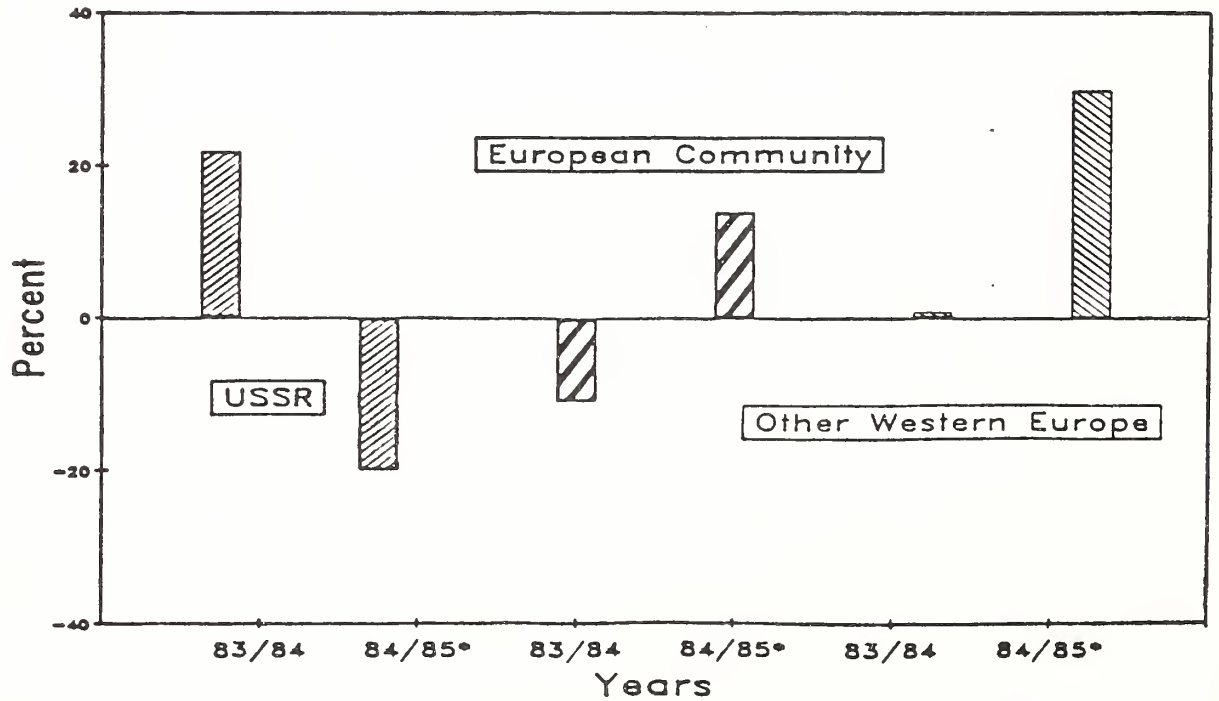
COARSE GRAIN IN THE USSR

	1982/83	1983/84	1984/85 FORECAST
	MILLION TONS, JULY-JUNE YEAR		
PRODUCTION	86	105	84
FEED USE	68	82	78
IMPORTS	11.3	11.5	23.0
	MILLION HEAD (AS OF SEPT. 1)		
ANIMAL NUMBERS			
CATTLE	93.6	95.1	97.0
HOGS	59.1	61.8	62.6
POULTRY	747.0	764.0	774.7

Coarse Grain Production
Change from Previous Year



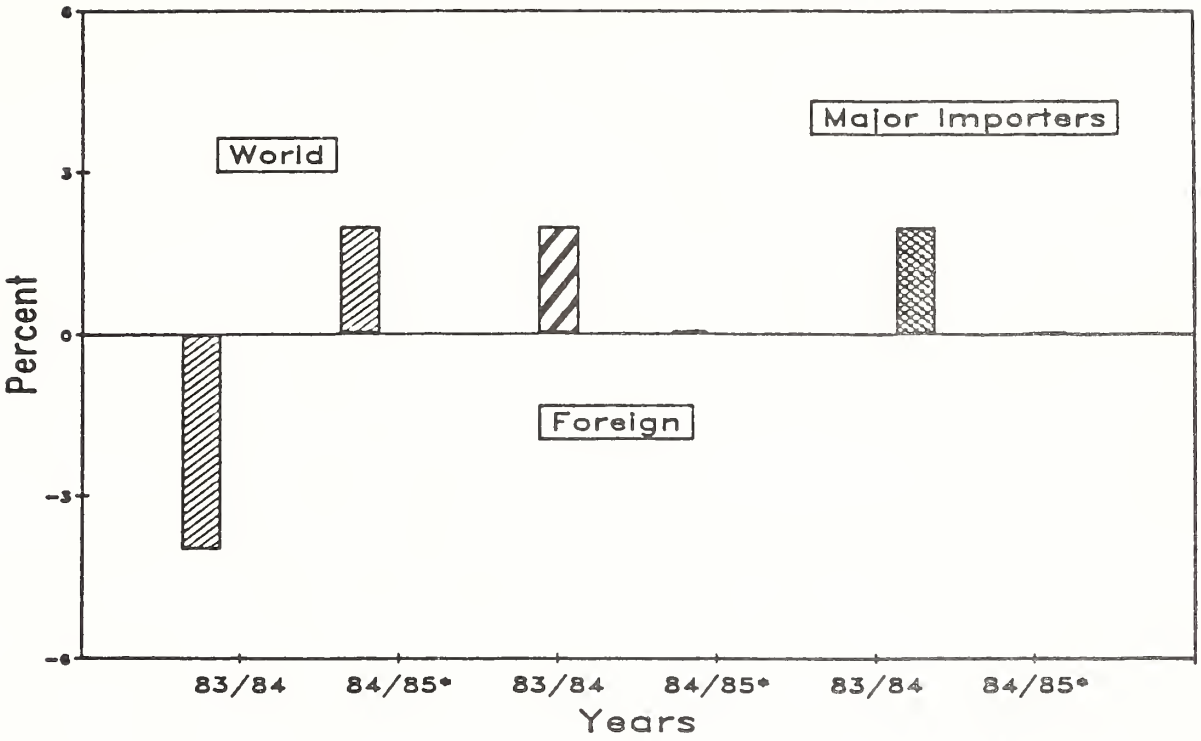
Coarse Grain Production
Major Importing Country Output Changes
Percent Change from Previous Year



** 1984/85 Forecast*

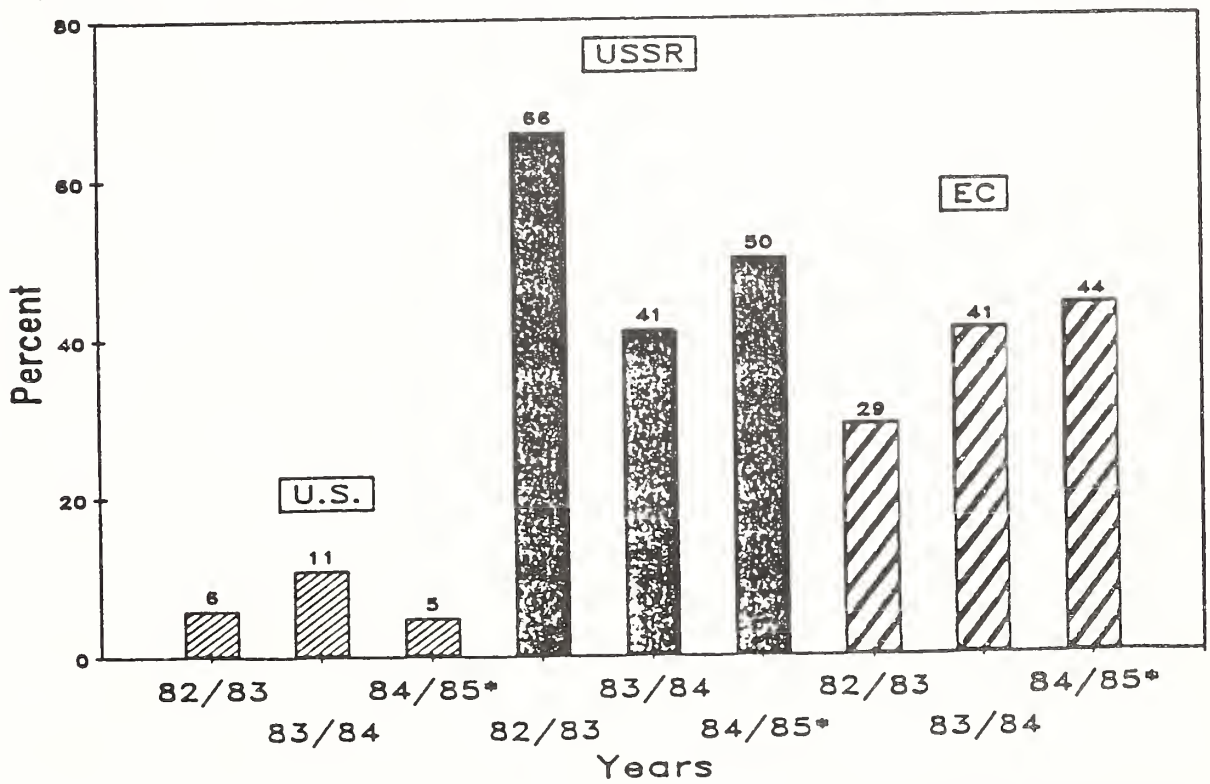
Feed Use of Coarse Grains

Percent Change from Previous Year

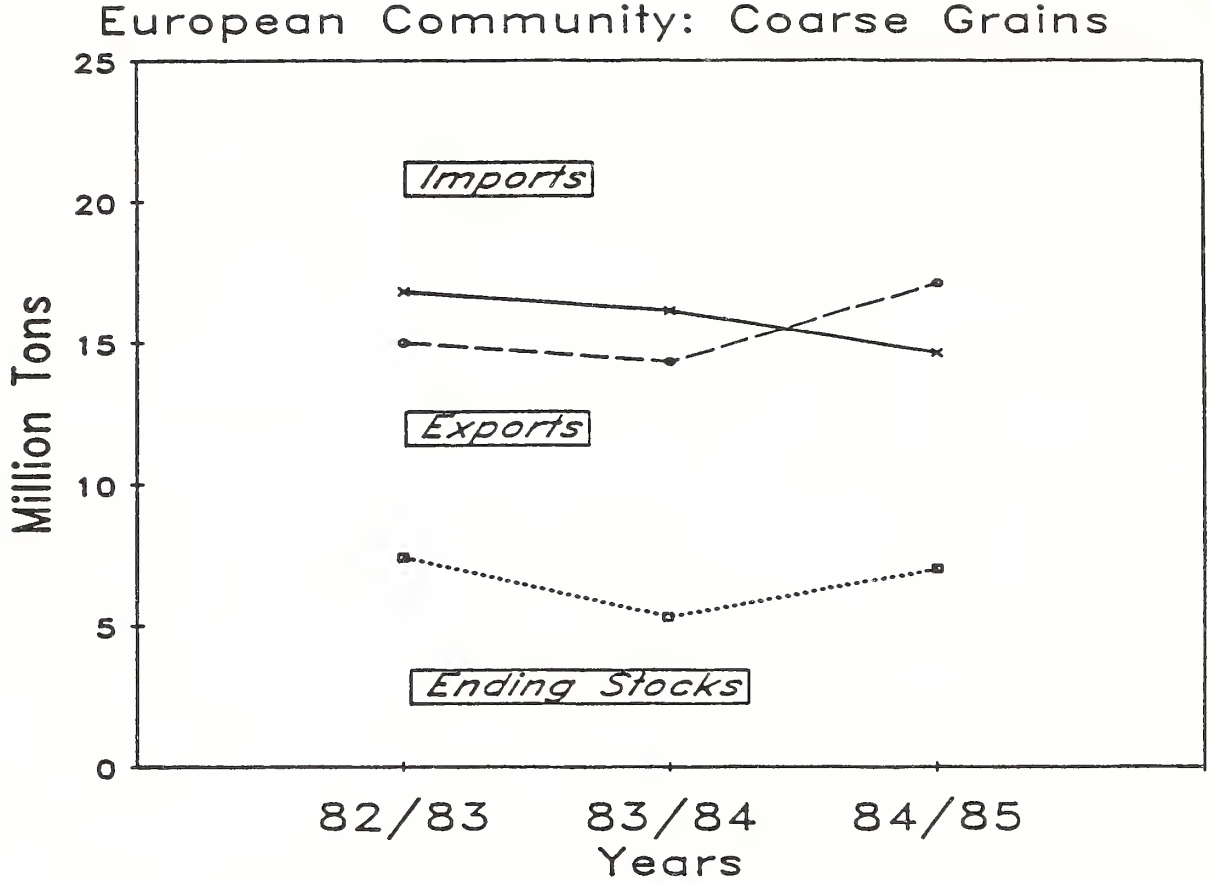


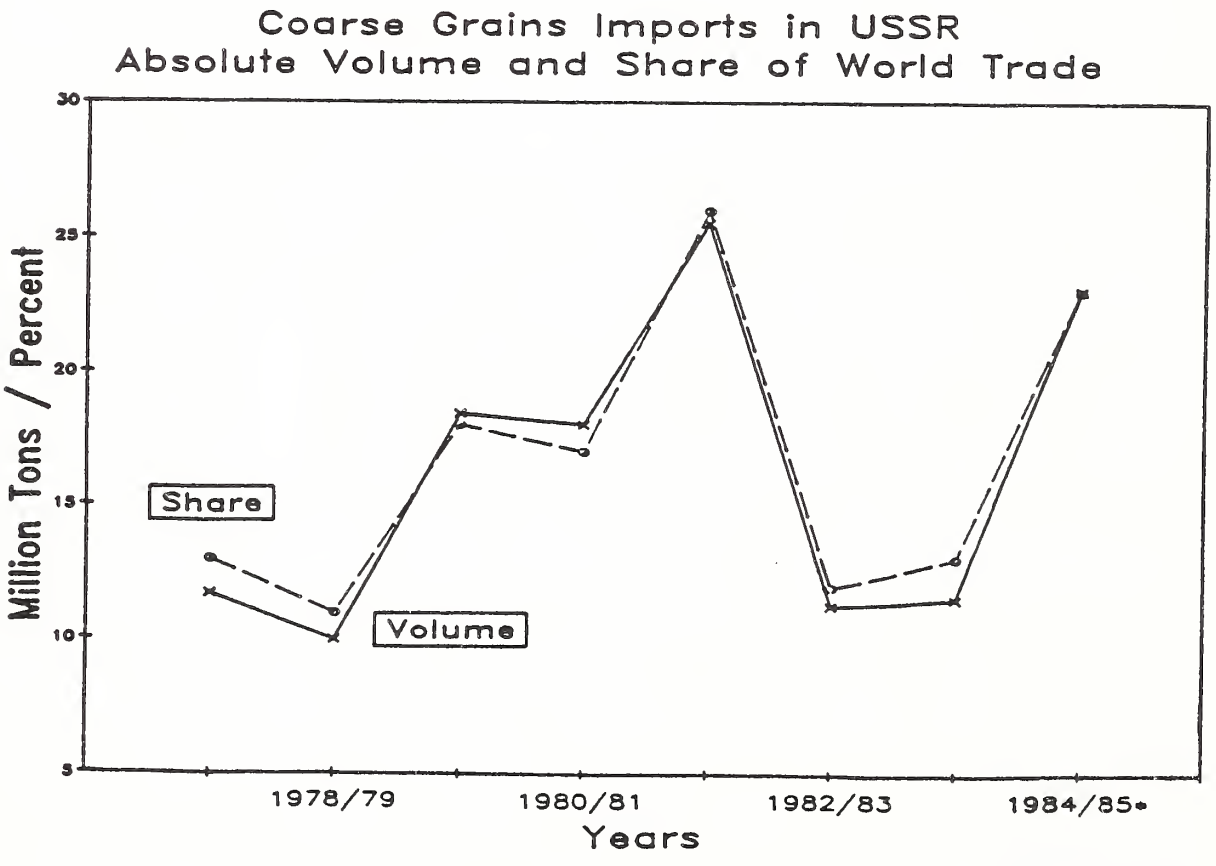
* 1984/85 Forecast

Wheat as Share of Coarse Grain Feeding



* 1984/85 Forecast


European Community: Coarse Grains
Million Tons
25
20
15
10
5
0
Imports
Exports
Ending Stocks
82/83
83/84
84/85
Years


Coarse Grains Imports in USSR
Absolute Volume and Share of World Trade
Million Tons / Percent
30
25
20
15
10
5
Share
Volume
1978/79
1980/81
1982/83
1984/85*
Years
* 1985/85 Forecast

1985 OUTLOOK FOR FEED GRAINS

OUTLOOK '85

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Larger Supply Lower Prices in 1984/85

The outlook for feed grains for the 1984/85 feeding year (October-September) is for a larger supply, larger use, lower prices and an increase in ending stocks next October. Oats will be somewhat of an exception in that this year's supply and price will be about the same as last year.

The total feed grain supply for the October '84-September '85 feeding year will be about 277 million metric tons, up about 30 million metric tons from the supply of 247 million tons in 1983/84. Beginning stocks this year were down about 64 million from stocks of 108 million tons on hand October 1, 1983, with corn down 61 million tons, sorghum down almost 4, oats down a half million, but barley up 1.5 million. The lower beginning inventory was more than offset by an increase of almost 94 million tons in the combined corn and sorghum harvest this year. The barley and oat harvest next summer is expected to be about the same as 1984 harvest of 20.1 million tons but with slightly less barley and more oats.

Feed grain disappearance in 1984/85 is estimated at 217.4 million metric tons, an increase of about 15 million tons over 1983/84 use. Exports are expected to be up about 5 million tons, food, seed, and industrial use (FSI) up about 2 million, and feed and residual use likely will be up about 8 million tons.

The increase in expected disappearance is about half the increase in total supply leaving about 15 million tons to be added to carryover stocks next October. This would put carryover at almost 59 million tons--well below the extremely large carryover in 1983 yet the fourth largest in the last 15 years.

An important change in the feed grain outlook this year is the reduction of wheat that will be used as a feed grain. The feed and residual use of wheat amounted to 488 million bushels in the 1983/84 feeding year--the greatest amount of wheat used by livestock and poultry since the record use during WWII of 511 million bushels in 1943/44. Feed use of wheat was particularly heavy this past June-September--366 million bushels. The feed and residual use in 1984/85 likely will be about half of the 1983/84 total, with most of the use next June-September--the harvest season for wheat.

The weighted season average price received by farmers for feed grains was a record $123.74 a metric ton in 1983/84. The increase in demand this year is not expected to be sufficient to offset the larger supply so prices will average lower. Based on early season market conditions, the weighted average price received by farmers in 1984/85 is expected to be about $109 dollars a ton--down about 12 percent from last year. However, this year's weighted average price likely will be the fourth highest of record--exceeded only in the drought years of 1983/84, 1980/81, and 1974/75.

Corn will be about 83.3 percent of the total use of feed grains this year, about the same as the average for the past six years. Thus, corn dominates the feed grain market and is a major factor in determining the prices of other feed grains.

The 1984 corn crop is estimated at 7.53 billion bushels--almost 81 percent larger than the payment-in-kind (PIK) and drought-reduced crop of 1983. This year's harvest was supplemented by carryover stocks of 722 million bushels, the smallest carryover since 1976. Thus, the corn supply for 1984/85 is near 8.3 billion bushels, about a billion bushels larger than the 7.3 billion available in 1983/84.

The disappearance of corn is expected to be about 7.1 billion bushels in 1984/85--1/2 billion bushels above last season, with all categories of use contributing to the increase.

Food, seed, and industrial use of corn has grown consistently the past 15 years with the rate of gain accelerating the past couple of years in response to the expanding markets for high fructose corn syrup (HFCS) and ethanol. The two major soft drink manufacturers have been leaders in the shift to use of HFCS and now use this sweetner 100 percent in their entire line of caloric sweetened drinks. Only a couple of labels of the 20 leading soft drink manufacturers do not use HFCS today. The use of ethanol as a gasoline additive has also expanded rapidly in the past couple of years and an increase in the Federal tax break on ethanol-gasoline blends likely will stimulate further growth this year. FSI use is expected to increase by 75 million bushels this year to a total of 1,050 million bushels.

Exports are expected to increase about 11 percent from 1.87 billion bushels last year to almost 2.1 billion this year. Heavy buying by the USSR is a major factor in the rise in prospects for exports.

Feed and residual use of corn this year is expected to be about 4.0 billion bushels, an increase of 7 percent over last season's disappearance of 3.73 billion bushels. The grain-consuming animal unit index for 1984/85 is down slightly from last year's index but the price of corn will average lower relative to wheat than last year. Thus, most of the increase in feed use is expected to result from corn replacing wheat in livestock and poultry feeding. The 488 million bushels of wheat fed in 1983/84 have the same amount of metabolizable energy as almost 500 million bushels of corn for feeding ruminants, 592 million for swine, or 455 million in poultry feeding.

Current livestock corn price ratios are considerably higher than they were a year ago. For example, in early November the Hog-corn ratio at Omaha was 17.29 compared with a ratio of 12.05 a year earlier. This is a 30 percent drop in the ratio of the cost per pound of corn to the price per pound of slaughter barrows and gilts, which could encourage feeding to heavier weights and perhaps some increase in farrowings in the late spring and early summer next year. Either of these events would tend to increase the feed use of corn.

With the gain in disappearance falling about 400 million bushels short of the increase in supply, ending stocks are expected to rise to a little over 1.1 billion bushels. Although this is up sharply from the low carryover stocks this past October, it does not approach the burdensome stocks of 1982 or 1983. Ending stocks would be 15.8 percent of expected use--a ratio low enough to keep corn prices from being held near the loan rate.

Based on the relationship of the spread between the loan rate and the season average price for corn, ending stocks as a percent of disappearance, and the feed and residual disappearance of wheat, the seasonal average from price for 1984/85 would be about $2.80 a bushel.

$$Y = 252.96 - 12.37X_1 - .186X_2$$

$$R^2 = .929; \quad X_1 \leq 19$$

Where:

$$Y = \frac{\text{Seasonal average price-loan rate}}{\text{loan Rate}}$$

X_1 = Ending stocks as percent of disappearance
X_2 = Feed and residual use of wheat (Oct.-Sept.)

One important fact to keep in mind is that about 625 million bushels of corn are tied up in the farmers-owned reserve (FOR) and the Commodity Credit Corporation (CCC) inventory. The price of corn would have to rise substantially before any of this corn would be available to the market. Therefore, of the 1.1 billion bushels of ending stocks expected for next October, free stocks will amount to less than 500 million bushels. Consequently, factors that increase the use of corn beyond present expectations will tend to tighten free stocks and place upward pressure on corn prices.

If crop conditions deteriorate in the Southern Hemisphere coarse grain exporting countries, U.S. exports of corn would tend to increase beyond the present forecast and corn prices would average higher. More information will be available on the Southern Hemisphere harvests by late winter and spring.

An increase in domestic livestock production beyond current expectations could increase corn use next summer adding strength to corn prices for the latter part of the feeding year. The December and March Pig Crop Reports and the January and April Cattle On Feed Reports will be key sources of data.

Planting and growing conditions for corn and the other feed grains next spring and summer also could tend to strengthen corn prices for the latter part of the feeding year. If feed grain crop prospects next summer

were reduced by adverse weather conditions, corn use and prices would tend to rise.

Conversely, if Southern Hemisphere crops and/or domestic feed grain harvests turn out larger than currently expected, corn prices would tend to be under downward pressure the latter part of the feeding year.

Another factor that may have some bearing on the price of corn and the prices of protein concentrate feeds as well is the price of corn gluten feed. Exports of corn gluten feed have not kept pace with production the last half of the 1983/84 feeding year and the price for corn gluten feed has dropped considerably. For example, the price of corn gluten feed at Chicago averaged $76.88 a ton in October compared with $111 a ton last March. Thus, the cost per pound of crush protein in the form of corn gluten feed dropped from 23.5 cents to 16.3 cents a pound. Soybean oil meal (44 percent protein) would have to sell for about $131 a ton at Chicago to yield the same cost per pound of crush protein. However, when corn gluten feed is substituted for part of the soybean oil meal in a feed mix, the amount of corn used in the mix would also decrease and some high energy source such as animal fat would have to be added to maintain the energy level. Consequently, if increasing quantities of corn gluten feed are used domestically it will tend to decrease somewhat the amount of feed fed.

Sorghum

This year's sorghum supply is almost 1.1 billion bushels, about 200 million larger than last year's supply. The increase is the result of a 70 percent increase in harvest this year over the PIK and drought-reduced crop in 1983. However, almost 270 million bushels of this years supply are in the FOR and CCC stocks leaving a free supply of about 800 million bushels. Disappearance this year is expected to total 710 million bushels--a significant increase from the 630 million bushels used last year. Exports are expected to reach 250 million bushels, almost the same as shipped last year. Feed and residual use is forecast at 450 million bushels a gain of almost 80 million from last year's use of 373 million. Last year, feed and residual use was low because of the competition from wheat. Wheat was a lower priced source of energy than sorghum in much of Central and Southern Plains, the Southeast and South Central regions during 1983/84. Moreover, when the distribution of PIK entitlement sorghum was completed in April, most of the remaining stocks were isolated in the FOR and CCC and not available to the market.

Competition from wheat prevented the triggering of the sorghum reserves. This situation also resulted in unusually wide spread between the prices for corn and sorghum. As corn stocks tightened, price rose to trigger the corn reserves. However, the price of sorghum was held down by the price of wheat. The farm price per bushel of sorghum in 1983/84 averaged only 86 percent of the price of corn compared with the long run average of almost 92 percent.

With this year's crop of sorghum on the market, sorhgum and wheat prices have returned to more normal relationships and sorhgum is replacing wheat in livestock and poultry rations. The season average price of sorghum is expected to be in the range of $2.40-$2.55 a bushel. The price likely will improve seasonally through the winter. However, if growing conditions are good in southern Texas next spring, the early harvest in

the Rio Grande and Coastal Bend area of Texas will start prices down again in early summer.

Barley

A record barley crop of 606 million bushels this year resulted in record large beginning stocks of 584 million bushels for the 1984/85 feeding year - almost 70 million bushels larger than the 516 million bushels on hand October 1, 1983. About 105 million bushels of the beginning stocks were in the FOR and CCC inventory, almost the same as a year earlier.

Disappearance from October 1 to next June is expected to be almost 329 million bushels--virtually unchanged from the 326 million used in the comparable period last year. This would leave June 1 stocks of 255 million bushels, an increases of 13 percent from a year earlier. The barley supply during next June-September will be increased by the 1985 harvest, which is not expected to reach this year's record.

The price received by farmers for June-October this year averaged $2.38 a bushel, the same as a year ago. However, prices were higher in June and July and then dropped below year-earlier prices in August. With lower corn prices in sight this winter and next spring, barley prices are expected to continue below a year earlier the balance of the feeding year. The June-May average is expected to be $2.20-2.40 a bushel. The season average price of barley for the comparable period last year was $2.50.

A narrower spread between the price of malting barley and the price of feed barley will also tend to hold the average farm price lower this year. A larger proportion of this year's barley acreage was sown to malting barley varieties so that the market supply of malting barley is large and malting barley prices are weaker relative to feed barley.

Oats

The area harvested for oats this year--8.1 million acres--was the smallest since 1866. A record yield of 58.4 bushels per acre resulted in a harvest of 472.5 million bushels--4.6 million less than last year's harvest and the second smallest oat crop since 1881.

Adding June 1 stocks of 181.1 million bushels, and imports during June-September of 5.8 million, gave a total supply of 659.4 million bushels for the June-September period. Use during June-September was 184.6 million bushels leaving stocks of 474.2 million bushels on hand at the beginning of the 1984/85 feeding year. An additional 14 million bushels are expected to be imported between October and next June, bringing total supply for October-May to 488 million bushels--about 7 percent less than the 524 million available a year earlier.

Feed use for October-May is expected to total 233 million bushels, a decrease of 17 percent from the 281 million bushels fed in the same period last year. Exports and food and seed use likely will total about 65 million bushel which will bring total disappearance for October-May to 298 million bushels, leaving 190 million on hand next June. New crop oats will add to the feed grain supply during June-September.

On a crop year basis (June-May), the price received by farmers in 1983/84 averaged $1.69 per bushel, but on a feed year basis the average was $1.74 per bushel. This was because the large crop of oats in 1983 held the price of oats low relative to corn during June-September. With this year's small crop of oats, the price in June-September was stronger.

Although this year's supply, on a crop year basis, is down about 14 percent from last year, the season average farm price likely will be about the same, but on a feed year basis may average somewhat lower, particularly if a larger oat crop is harvested next summer.

FARM INCOME SITUATION AND OUTLOOK

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1985 Agricultural Outlook Conference, Session #13
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OUTLOOK '85

Although the payment-in-kind (PIK) program provided much needed temporary relief to many farmers during the past year, general economic conditions within the farm sector remain weak and current prospects indicate little improvement is likely in the months ahead. Net cash income, which was a nominal record-high in 1983, largely due to PIK, is expected to fall this year and again in 1985 as farm output rises and supplies begin to build. The fundamental problem in U.S. agriculture--commodity supplies exceeding demand--is expected to be the main reason for lower net cash income in the year ahead.

Some potential bright spots in the agricultural economy include an expected increase in export volume in 84/85, continued small increases in farm input prices caused by moderation of inflationary pressures in the general U.S. economy, lower feed prices which may hurt cash grain farmers but reduce costs for livestock producers, and the disbursal of Government payments which have been especially important in aiding cash flow within the sector since 1983. The impact of PIK was still felt strongly in 1984 as disbursal of 1983 PIK crops continued into the second quarter. The safety net provided by deficiency payments and CCC loans will likely remain very important to the sector through 1985.

Prices and Output

Prices received by farmers in 1984 for all commodities are expected to average about 5 percent greater than during 1983. Crop prices will likely average 8 percent higher as strong prices for fruits and nuts (+45%), cotton (+7%), and oil crops (+7%) outweigh lower prices for food grains (-3%). Prices received for livestock and products are expected to average 3 percent above a year earlier on the strength of demand-inspired poultry and egg prices (+14%) and higher meat animal prices (+3%). Dairy prices received will fail to rise for the third consecutive year and, in fact, will fall 1 percent in 1984. In 1985, prices received for all farm products will likely fall 0 to 4 percent as lower crop prices caused by excessive supplies outweighs slightly higher livestock prices caused by stronger meat animal prices.

Prices Received and Paid by Farmers, 1981-1985

Item	1981	1982	1983	1984F	1985F
	Percent change from previous year				
Prices Received:					
Crops	7.2	-9.7	5.0	7.9	-7 to -5
Livestock	-0.7	1.4	-2.8	2.8	0 to 2
All commodities	3.7	-4.3	0.8	5.2	-4 to 0
Prices Paid:					
Production items	7.2	1.4	2.0	2.0	2 to 4
Commod. & services, interest, taxes, and wages	8.7	4.7	2.5	2.5	2 to 4
Farm origin inputs	1.4	-4.1	3.6	0.7	- 1 to 1
Nonfarm origin inputs	10.9	5.3	3.1	2.4	3 to 5
Ratio 1/	-4.1	-8.6	-2.1	2.4	- 6 to -4

F = Forecast. 1/ Index of prices received by farmers for all commodities divided by the index of prices paid by farmers for commodities and services, interest, taxes and wage rates, 1977=100.

Prices paid by farmers for all items likely rose under 3 percent this year. Prices paid for inputs with farm origin (feed, feeder livestock, seed) remained fairly stable as higher seed and slightly higher feed prices offset lower feeder livestock prices. Prices paid for manufactured (nonfarm origin) inputs rose 2 percent in 1984 due mostly to higher machinery and fertilizer prices. Of all input items, seed and autos and trucks rose the most with each registering a 7-percent increase in 1984. In the year ahead, prices paid by farmers for all items are expected to rise 2 to 4 percent as nonfarm origin input prices rise faster than prices for inputs with farm origin. Prices for feeder livestock and autos and trucks are expected to rise the most in 1985.

Total farm output in 1984 will likely rise 16 percent from the drought and PIK shortened 1983 output. Crop production rose 26 percent after falling 26 percent in 1983 as both acres harvested and yields increased. Sharply higher output of feed grains, cotton, and oil crops were the most important in raising overall crop output. Livestock and products output likely fell slightly in 1984 from the record 1983 level as lower milk output and flat meat animal production outweighed stronger poultry output.

In 1985, total farm output is expected to rise 0 to 4 percent on the strength of higher crop output. Livestock production is expected to about equal that of 1984, as stronger poultry output offsets lower meat animal production. Milk output is not expected to change much from the 1984 level.

Farm Output, Input, and Productivity, 1981-1985

Item	1981	1982	1983P	1984F	1985F
	Percent change from previous year				
Output:					
Crops	14.9	1.7	-26.3	26.4	1 to 3
Livestock	0.9	-1.8	1.9	-0.9	-1 to 1
Total	14.6	3.4	-18.4	17.2	0 to 4
Input use	-1.0	-2.0	-5.0	4.2	-1 to 1
Productivity	13.9	0.9	-15.5	12.2	0 to 2

P=Preliminary. F=Forecast.

Cash Receipts

Total cash receipts from 1984 marketings of farm products are expected to rise 1 to 3 percent from 1983's $138.7 billion. Crop cash receipts are expected to increase 0 to 2 percent from the low $69.5 billion in 1983. Crop receipts increased because of stronger prices, especially during the first-half of the year. This outweighed lower overall marketing volume caused by the poor 1983 crop output. Livestock cash receipts are expected to rise 2 to 4 percent from the 1983 total of $69.2 billion. Livestock receipts likely rose in 1984 mostly because of stronger prices received while overall marketing volume was about unchanged from 1983.

In the year ahead, total cash receipts are expected to increase 1 to 5 percent as crop receipts increase 1 to 5 percent and livestock moves up 0 to 4 percent. Assuming an absence of weather extremes in the coming growing season, crop output could exceed the 1984 total. The resulting increased marketing volume would then be the key to higher crop receipts as average prices decline while livestock will likely depend on a combination of slightly stronger volume and a small rise in prices received.

In the livestock sector, receipts in 1984 will likely exceed the 1983 totals for all categories except milk and hogs. Cash receipts for cattle in 1984 will likely rise 5 to 7 percent as both prices and marketings increase. The expected 3 percent increase in the farm price of cattle will be the first since 1979 as cattle prices have steadily fallen the past 4 years. A combination of large total meat supplies and poor general economic conditions earlier in the decade were responsible for much of the decline in beef prices. In 1985, assuming no major deterioration in meat consumption, lower meat supplies will likely lead to higher beef prices. These higher prices will outweigh lower beef production, leaving cattle receipts up somewhat.

Cash receipts from marketings of hogs in 1984 are expected to fall 1 to 3 percent, the second consecutive year hog receipts have fallen. Although pork production likely fell 3 to 4 percent, prices for barrows and gilts only increased about 2 percent because of large supplies of

competing chicken and beef. With meat supplies expected to fall in 1985 and pork output for the year expected to remain near 1984 levels, hog prices and cash receipts are expected to rise moderately.

Cash Receipts, 1981 - 1985

Item	1981	1982	1983	1984F	1985F
	Billion Dollars				
Crop receipts 1/	73.3	74.6	69.5	68-72	70-74
Food grains	11.6	11.5	10.0	8-10	9-11
Feed grains & hay	17.1	18.3	16.8	15-17	15-19
Oil crops	13.9	14.0	13.3	13-15	11-15
Other crops	30.7	30.8	29.4	30-32	30-34
Livestock receipts	69.2	70.1	69.2	70-74	71-75
Meat animals	39.8	40.9	38.8	40-42	40-44
Poultry and eggs	9.9	9.5	10.0	11-13	10-12
Dairy products	18.1	18.3	18.8	17-19	17-19
Other livestock	1.3	1.4	1.6	1-2	1-2
Total cash receipts	142.5	144.8	138.7	139-143	142-147

1/ Includes net CCC loans.

In a repeat of the strong 1983 performance, receipts from broilers will likely realize the largest gain of all livestock categories in 1984. Strong demand for chicken has allowed broiler prices to increase more than a tenth this year even though production has increased about 4 percent. The result has been a good year for broiler producers with cash receipts rising about a sixth—the greatest year-to-year gain since 1978. In 1985, broiler receipts may remain near 1984 levels as expanded output exceeds demand, resulting in lower broiler prices.

After a strong start this year, cash receipts from egg marketings have leveled off, leaving the expected 1984 total about 5 to 7 percent above the $3.4 billion of 1983. During the first half of 1984, Avian flu-reduced supplies were partly responsible for prices skyrocketing while increased second-half production caused prices to fall back to near pre-flu levels. In 1985, egg prices—free of Avian-flu influences—could fall back to near 1982 levels. These lower prices will likely outweigh gains in production, leaving egg receipts somewhat lower than in 1984.

In 1984, milk production declined for the first time since 1978, falling nearly 3 percent from last year's record level due to reduced milk marketings by participants in the dairy paid diversion program. While milk marketings fell in 1984, average milk prices received by farmers also fell about 1 percent due to the reduced support price and large supplies relative to demand earlier in the year. The combination of lower prices and reduced marketings will leave dairy cash receipts down 4 to 6 percent in 1984—the first decline since 1962.

In the year ahead, cuts in the milk support price will likely lead to further declines in milk prices received by farmers. Part of this decline will likely be offset by increasing marketings caused by the ending of the diversion program, leading to a small decline in dairy cash receipts.

In the crops sector, receipts are expected to move up slightly in 1984. Higher prices in the first half of the year were outweighed by sharply reduced volume leaving receipts lower than a year earlier. However, increased volume in the second-half likely outweighed lower prices, leaving crop receipts above a year earlier and contributed to slightly higher annual receipts. Receipts are expected to decline for wheat, corn, sunflower seed, and cotton. These declines will be outweighed by increases for hay, soybeans, peanuts, fruits, and vegetables.

Due to the unusual circumstances of last year (drought and PIK), it is possible that marketing patterns for the 1983 crop could have departed from the three year average assumed in the forecast. This could have caused shifting of receipts between 1983 and 1984. This information will be available shortly in the December "Crop Production" report. In 1985, crop receipts are forecast to increase somewhat as receipts for corn, sorghum, rice, cotton, and wheat outweigh expected declines in soybeans, peanuts, and tobacco.

Food grain receipts are expected to fall 5 to 7 percent in 1984 as wheat receipts decline 6 to 8 percent, outweighing a 4 to 6 percent gain in rice receipts. Rye receipts are also expected to decline. Wheat receipts are expected to fall because of a combination of reduced marketings (caused by the lower 1983 output) and lower wheat prices. Rice receipts are forecast to rise because of higher prices earlier in the year and increased marketings from this year's crop. In the coming year, receipts from food grains could rise somewhat as rice receipts, on the strength of increased marketings, rebound substantially and wheat receipts increase modestly.

Feed grain cash receipts are expected to fall 6 to 9 percent this year, due mostly to a drop of more than a tenth in corn receipts. Although corn production is up 81 percent this year, most of this will be marketed in 1985. Corn marketings in 1984 are down because of the very small 1983 crop. These lower marketings will outweigh somewhat higher prices leaving receipts lower this year. Next year, corn receipts are expected to rebound despite lower prices as the volume of marketings improves. Sorghum receipts are not expected to exhibit much change in 1984 as both marketings and average prices remain near year-earlier levels.

Oil crop receipts in 1984 may show a 4 to 7 percent increase over the $13.3 billion total of 1983. Soybean receipts could increase 2 to 5 percent because of the combined effects of higher first-half prices and stronger second-half marketings. Soybean production in 1984 is up 16 percent because of higher harvested acreage and better average yields. This stronger production will cause first-half 1985 marketing volume to increase over the comparable 1984 period. However, sharply lower prices in 1985 will likely overwhelm the increase in volume, leaving soybean receipts somewhat below the 1984 levels. After posting a sizable gain in 1984 because of strong marketings, peanut cash receipts will likely decline measureably due to lower marketings and prices.

Cotton cash receipts for 1984 are expected to fall 6 to 9 percent from the $4.3 billion of 1983. Production of cotton increased 71 percent this year over the drought and PIK-reduced 1983 output. Roughly 60 percent of cotton production is marketed in the calendar year of production. However, lower first-half receipts caused by reduced marketings from the short 1983 crop likely outweighed slightly stronger marketings and receipts during the second-half, leaving 1984 annual receipts lower. In the coming year, cotton cash receipts could increase somewhat due to increased marketing volume.

Vegetable cash receipts in 1984 are expected to rise 6 to 9 percent from the $8.2 billion of 1983. An increase in potato cash receipts of about one fourth over the $1.5 billion of 1983 will account for much of the increase in vegetable receipts. Higher potato prices compared with a year earlier and stronger crops in each of the 4 production seasons, equaling a 7 percent increase in total production, led to the rise in receipts. Potato receipts account for about a fourth of total vegetable receipts. Prices received for all commercial vegetables (excluding potatoes, sweetpotatoes, and dry beans) rose about 4 percent in 1984. In 1985, vegetable cash receipts may not change measureably from the 1984 level as potato prices and receipts decline with large supplies relative to demand. This drop in potato receipts next year will be offset by small increases in other vegetable receipts such as for dry beans.

Fruit and nut cash receipts are expected to increase 9 to 13 percent over the $6.2 billion of 1983. Volume of marketings in 1984 will be significantly below that of 1983 due to lower production of citrus fruits (especially oranges), apples, pears, and grapes. Almond production was record large while walnut output also increased. Prices received by farmers for all fruit increased more than 40 percent, outweighing the drop in production. In 1985, receipts from fruits and nuts may fall somewhat as increased production is offset by lower prices received.

Government Payments

As in 1983, Government payments will provide a significant contribution to 1984's gross cash income. Direct Government payments (cash plus PIK disbursements) in 1984 are forecast to be $7 to $10 billion, just below last year's record of $9.3 billion. Advanced payments on the 1985/86 crop are expected to be made during the final quarter of 1984. These advances will supplement the 1984 cash flows of wheat, rice, feed grain, and cotton farms. Total 1984 cash payments (deficiency, diversion, storage, and conservation programs) are now expected to total $3 to $5 billion, compared with last year's record $4.1 billion. Milk diversion payments (most of which are financed by operators through milk marketing assessments) and wheat deficiency and diversion payments will account for a major portion of total 1984 cash payments.

Advanced deficiency and diversion payments, which farmers may request when they sign up for 1985 farm programs, may shift nearly $1 billion in Government payments to the fourth quarter of 1984. Since sign-up extends until March 1985, advances could also provide additional cash flow to the sector in the first quarter of 1985. This cash would aid in purchasing production inputs and machinery for the 1985 planting season and would decrease the amount of external financing necessary for operations.

Total potential advanced payments on the 1985/86 crop are about $2.6 billion, although it is unlikely that all these will be taken as advances.

In the year ahead, direct Government payments will consist almost entirely of cash payments with just a trickle of wheat PIK payments likely to be disbursed in January. Direct Government payments are forecast to range from $4 to $7 billion in 1985 with more than half this amount consisting of deficiency payments, and another quarter coming from diversion payments, including milk diversion.

Other Income

Besides cash receipts from marketings of crops and livestock and Government payments, farmers also earn other cash income from such farm-related sources as machine hire, custom work, and recreational income. Income from these sources is expected to rise a third from the $1.5 billion of 1983. The rise will be due to increased machine hire and custom work income caused by higher acreage planted and harvested as well as a 26 percent rise in crop output. In 1985, slightly higher acreage planted and harvested will likely result in somewhat higher earnings from these other cash sources.

The nonmoney income category of the farm income account represents the gross rental value of housing provided by farm dwellings and the value of farm products consumed directly in farm households. The value of nonmoney income likely totaled 2 to 4 percent lower in 1984 than the $13.6 billion of 1983. This small change was due primarily to the reduced gross rental value of farm dwellings caused by the lower value of farm buildings in 1984. For the year ahead, nonmoney income will likely stabilize or continue to trend slightly lower, following the decline expected in farm real estate values. The nonmoney imputations are excluded from the estimates of farmers' cash income and cash flow.

Production Expenses

The rebound in planted and harvested acreage this year, and the subsequent recovery in use of production inputs, are the main reasons for the expected 5 to 7 percent increase in 1984 cash production expenses. Total production expenses, which also include depreciation, household expenses, and labor perquisites, are expected to rise 4 to 6 percent. Input use is expected to show an increase of 3 to 5 percent in 1984, recovering much of the PIK-induced decline of 1983. For the second consecutive year, prices farmers pay for their production inputs will be less important than the level of input use in determining the change in farm production expenses. For 1985, continued moderation in prices paid by farmers for production inputs combined with stable input use may lead to a 1 to 5 percent increase in cash expenses and a 0 to 4 percent rise in total production expenses.

Total farm production expenses for 1984 are expected to range from $141 to $143 billion. The mid-point of this range is less than 4 percent above the 1981 total of $136.9 billion. Of the major categories, only interest expenses and other operating expenses have shown increases since 1981. Interest expenses this year are expected to total near the

1982 level. Farm origin input expenses which were $31.6 billion in 1981, have remained near the $31 billion mark since then because of a combination of low feed and feeder livestock prices.

Farm Production Expenses, 1981-85

Item	1981	1982	1983	1984F	1985F
	Billion Dollars				
Farm origin inputs	31.7	30.5	31.2	30-32	30-34
Manufactured inputs	24.5	22.9	20.9	22-24	22-26
Interest charges	19.9	22.2	21.2	22-24	22-26
Other operating	28.3	31.1	30.6	32-34	31-35
Other overhead	32.5	32.8	31.4	31-33	31-35
Total expenses	136.9	139.2	135.3	141-143	142-147
Cash expenses	111.4	113.4	109.5	115-117	118-122

F = Forecast.

Manufactured input expenses totaled $24.5 billion in 1981, then declined in 1982 and 1983 because of reduced use. Increasing acreage and input use in 1984 will lead to a 10-12 percent rise in expenses. However, the total will still be below that of 1981. Other overhead expenses (depreciation, property taxes, and net rent to nonoperating landlords) are expected to total about $32 billion in 1984. Lower depreciation expenses, caused by reduced capital stocks, have offset increased property tax liabilities to leave the other overhead category unchanged. Other operating expenses (repairs, labor, machine hire, dairy collections, and miscellaneous items) have shown the greatest increase since 1981. This is due mainly to rising cash wages, crop insurance, and the addition of dairy collections in 1983.

When the first estimates of 1984 production expenses are released next August, they will reflect new benchmarks obtained from the 1982 Census of Agriculture. Because rebenchmarking could conceivably change the expense levels, it is suggested that more emphasis be placed on the changes from the previous year, rather than on the absolute magnitude of the numbers themselves.

Production expenses for farm-origin inputs account for more than a fourth of total cash expenses. With the exception of seed, these expenses are associated with the production of livestock and are expected to fall slightly in 1984 from the $31.2 billion in 1983. Feed expenses are expected to fall 3 to 5 percent this year as reduced feed consumption, reflecting lower pork production and increased nonfed cattle slaughter, outweighs a 2-percent rise in prices paid for feed. In 1985, feed expenses are expected to remain flat as lower feed prices are offset by increased consumption.

Outlays for feeder and replacement livestock in 1984 are forecast to remain about even with the 1983 level of $8.8 billion. Lower feeder cattle prices will offset stronger feeder pig prices, leaving prices paid for replacement and feeder livestock down nearly 4 percent. Lower feeder prices will be offset by rising inshipments of cattle and sheep which will outweigh declining inter-state hog shipments. In the year ahead, purchased livestock expenses are forecast to rise 5 to 9 percent. Most of this increase will be due to stronger feeder livestock prices. With improved livestock-feed price ratios, more feeders will be purchased and placed on feed.

Manufactured input expenses are expected to rise 10 to 12 percent in 1984 from the $20.9 billion of 1983 as use of these items rebounds from last year's PIK-induced declines and prices paid for these items increases modestly. Fertilizer expenses likely rose a sixth as total use increased about a tenth, recovering most of the decline experienced in 1983, and prices paid for the year averaged about 5 percent higher. In 1985, fertilizer expenses will be moved higher by a combination of increased use caused by slightly higher acreage and somewhat higher prices. However, price rises will remain near the general inflation rate as energy prices remain fairly stable.

Energy expenses are expected to increase 5 to 7 percent in 1984 due mostly to increased consumption of fuels and oils and higher electricity prices. Fuel prices in 1984 remained about even with 1983 levels and was the third consecutive year withoug an increase. Electricity prices per kwh continued to moderate, rising about 5 percent in 1984, the same as 1983. This followed double digit rises in 1982. In the year ahead, farm fuel consumption will not likely change much as higher acreage about offsets increased conservation and efficiency efforts, and prices could rise slightly for the first time since 1981. This would leave fuel expenses largely unchanged next year.

Total farm interest expenses are expected to increase 5 to 7 percent in 1984 due to rising average interest rates on outstanding farm debt. Average total debt outstanding is expected to decline slightly in 1984, as nonreal estate debt outstanding falls. This will be the first decline in average total debt since 1945. As in 1945, most of the decline in 1984 can be attributed to a drop in outstanding CCC loans. Loan repayments due to PIK obligations and stronger crop prices earlier this year were mainly responsible for the decline in CCC outstandings. Although average nonreal estate debt outstanding will likely fall in 1984, increasing interest rates charged by farm lenders for short-term credit will push nonreal estate interest charges up 7 to 9 percent. The average interest rate for PCA loans is expected to be up from the 11.9 percent in 1983. The percentage of total cash expenses accounted for by nonreal estate interest charges will likely rise slightly from the 9.5 percent of 1983. In 1985, nonreal estate interest expenses are forecast to increase moderately as both average outstanding debt and average interest rates increase. If crop yields follow trend in 1985 and export demand does not appreciably pick up, the resulting new CCC loans will begin raising CCC debt outstanding again.

Real estate interest expenses, as during 1983, are again expected to exhibit a small increase--perhaps 2 to 4 percent. Although long-term interest rates have risen this year, the increase will not materially affect the average rate on debt secured by real estate this year because of the extended turn-over period of this type of debt. Unlike nonreal estate debt, average real estate debt outstanding will likely rise slightly this year. The increase will likely be smaller than during 1983 and much lower than the explosive growth experienced during the late 1970's and early 80's. The uncertain financial position of the farm sector has kept real estate purchases to a minimum while declining land values in many areas has made it a risky proposition for financial institutions to extend loans secured by real estate assets. In the year ahead, real estate interest expenses are expected to continue to rise slowly as long-term interest rates increase and average outstanding debt moves up slowly.

Income Indicators

Increased cash receipts from marketings and rising machine hire and custom work income will likely outweigh slightly lower direct Government payments in 1984, leaving gross cash income up about 2 percent to a nominal record-high. Cash marketing receipts, although above the low 1983 level, will not approach the record high of 1982. At the same time that gross cash income is expected to rise slightly, a combination of increased input use and slightly higher prices paid will leave cash expenses up 5 to 7 percent.

Because of larger expenses outweighing higher gross cash income, net cash income in 1984 is expected to fall--ranging from $34 to $38 billion--compared with the record $40.1 billion of last year. This will be the first decline in net cash income since 1981 when, like this year, cash expenses increased more rapidly than cash sources of income. It is only the second decline since 1977.

In 1985, gross cash income is forecast remain flat as higher cash marketing receipts are offset by reduced Government payments. As in 1984, gross income will likely be outweighed by increased cash expenses--even though the rise in cash expenses will be small. Thus, net cash income is expected to fall to a range of $31 to $36 billion in 1985.

Net farm income measures the income generated from a given calendar year's production and does not measure the income which farmers have at their disposal. On the income sources side, this series includes not only gross cash income but also imputed gross rental value of farm dwellings, the value of home consumption of self produced foods, and the value of the physical change in farm commodity inventories. On the expense side, the net farm income series includes not only cash operating expenses, but also expenses associated with operation of the farm dwelling and noncash expenses such as depreciation and labor perquisites.

In recent years, net farm income has been much more volatile than net cash income because of extremes in weather patterns and crop output. Last year, severe drought combined with PIK-reduced acreage to yield the largest year-to-year cut in crop output on record. This resulted in huge

drawdowns of stocks of commodities built up in the excellent growing seasons of 1981 and 1982 and left the value of the physical change in commodity inventories at a record negative $11.7 billion. In 1984, crop output increased 26 percent and will result in some replenishing of stocks and a large increase in farm inventory change of about $6 to $10 billion. Because net farm income seeks to approximate a net value of production, the increase in output and the price levels in 1984 will likely leave net farm income nearly twice as high as the $16.1 billion of 1983--with a range of $29 to $33 billion likely.

In 1985, income prospects will be influenced by such variables as weather and it's impact on both crop and livestock output, the world economy and U.S. exports abroad, and farmers' decisions on such things as participation in acreage control programs, acreage planted, the mix of commodities planted, input use, and capital purchases and marketing decisions. Based on our assumptions and analysis of these variables, it appears that net farm income will be lower in 1985. Net farm income is forecast to range from $19 to $24 billion in 1985 as rising expenses, reduced Government payments, and a smaller increase in farm inventories will likely outweigh the volume-induced increase in commodity marketing receipts.

Off-farm income, which includes nonfarm wages and salaries, pensions, and interest income is expected to total $41 to $45 billion in 1984. Since 1980, off-farm income has accounted for the majority of total income for farms with sales of less than $100,000 of agricultural commodities per year. Farms with sales exceeding $100,000 (12 percent of all farms) of farm products, and who account for two-thirds of total farm output, rely mostly on farm-generated revenue for their livelihood. In 1985, off-farm income is forecast to total $43 to $47 billion as salaries and wages continue to increase in the general economy.

Net Cash Income by Farm Type

Out of the $40.1 billion in net cash income received in 1983, farms classified as crop farms received an estimated 55 percent or $25.8 billion, up from $21.9 billion in 1982. In 1984, crop farmers may receive $20 to $23 billion, down from 1983 because of higher expenses outweighing stronger receipts. Cash grain farms are expected to account for around 32 percent of crop income, down from about 44 percent in 1983. This group benefited the most from last year's PIK program. Vegetable farms are estimated to have the highest per-farm income, with over $90,000 a farm in 1983 and 1984.

Livestock farms likely accounted for 36 percent, or $14.2 billion, of the 1983 net cash income, down 5 percent from 1982. They are forecast to total $13 to $15 billion in 1984, or around 40 percent of the forecast total for the U.S. About 54 percent of all farms are classified as livestock operations. Net cash income per livestock farm is forecast to range from $11,200 to $11,600 for 1984, about the same as in 1983.

Dairy sector net cash income is forecast to total $5 to $6 billion in 1984, 35 percent of total livestock sector net cash income. The decline expected in 1984 for dairy cash receipts will be the first since 1962; however, further erosion in dairy receipts is expected again for 1985.

Farm Income and Cash Flow Statement

Item	1981	1982	1983	1984F	1985F
			Billion Dollars		
Farm Income Sources:					
1. Cash receipts	142.6	144.8	138.7	139-143	142-147
Crops 1/	73.3	74.6	69.5	68-72	70-74
Livestock	69.2	70.1	69.2	70-74	71-75
Cash Government payments	1.9	3.5	4.1	3-5	4-7
Value of PIK commodities	0.0	0.0	5.2	4-6	0
2. Direct Government payments	1.9	3.5	9.3	7-10	4-7
3. Other cash income 2/	1.9	2.0	1.5	1-3	1-3
4. Gross cash income (1+2+3) 3/	146.4	150.2	149.6	150-154	150-155
5. Nonmoney income 4/	13.6	14.2	13.6	12-14	12-14
6. Realized Gross Income (4+5)	160.0	164.4	163.2	163-167	163-168
7. Value of inventory change	7.9	-2.6	-11.7	6-10	-2 - 2
8. Total Gross Income (6+7)	167.9	161.8	151.4	171-175	163-168
Production Expenses:					
9. Cash expenses 5/ 6/	111.4	113.4	109.5	115-117	118-122
10. Total expenses	136.9	139.5	135.3	141-143	142-147
Income Statement:					
Net cash income: 1/ 6/					
11. Nominal (4-9)	35.0	36.8	40.1	34-38	31-36
Deflated (1972$) 7/	17.9	17.8	18.6	15-17	13-15
Net farm income: 1/					
12. Nominal total net (8-10)	31.0	22.3	16.1	29-33	19-24
Total net (1972$) 7/	15.9	10.8	7.5	13-15	8-10
Total net (1967$) 8/	11.4	7.7	5.4	9-11	6-8
13. Off farm income	39.8	39.4	41.0	41-45	43-47
Other Sources and Uses of Funds					
14. Change in loans outstanding 6/	15.5	6.8	2.9	4-8	2-6
Real estate	9.3	3.7	2.1	0-4	-1-3
Nonreal estate 9/	6.2	3.1	0.8	2-6	1-5
15. Rental income	5.7	5.6	4.3	4-6	4-6
16. Gross Cash Flow (11+14+15)	56.1	49.3	47.3	45-49	40-45
17. Capital expenditures 6/	16.8	13.6	13.1	12-14	11-15
18. Net Cash Flow 1/ 6/ (16-17)	39.3	35.6	34.2	32-36	28-33

F = Forecast. 1/ Includes net CCC loans. 2/ Income from custom work, machine hire, and farm recreational activities. 3/ Numbers in parantheses indicate the combination of items required to calculate a given item. 4/ Value of home consumption of farm products and imputed rental value of farm dwellings. 5/ Excludes depreciation and perquisites to hired labor. 6/ Excludes farm dwellings. 7/ Deflated by the GNP implicit price deflator. 8/ Deflated by the CPI-U. 9/ Excludes CCC loans.

Net cash income in the poultry and egg sector is expected to increase significantly this year to between $3 and $4 billion, compared with an estimated $2.3 billion in 1983. The increase is largely because of stronger egg and broiler prices and receipts. These farms may account for a quarter of all livestock net cash income this year.

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Current financial conditions in agriculture are the product of a combination of factors. Persistently low farm income due to weak export demand, high interest rates, and declining farmland values in many regions of the country have created severe financial stress among highly leveraged farm operators. Since the degree of financial leverage tends to determine which farmers are under stress and which are prospering (or at least getting by), the evaluation of the current situation will focus on the effects of financial leverage on farmers' profitability and the concentration of farm operators, debt, and assets in high leverage categories based on the results of the 1983 Farm Production Expenditure Survey.

Effects of Financial Leverage on Farm Profitability

Financial leverage, or the use of debt financing, tends to magnify the rate of return to equity. If the rate of return on assets is greater than the average interest rate, the rate of return on equity is greater than the rate of return on assets and increases as financial leverage increases. However, if the rate of return on assets is less than the average interest rate, the rate of return to equity capital is depressed and declines further as financial leverage increases. Table 1 illustrates this principle and shows that if a farmer earned the 1983 sector average rate of return on assets of about 3 percent and carried an average interest rate on outstanding debt of about 10 percent, a sector average 20 percent debt/asset ratio would have resulted in a 1.2 percent rate of return to equity. The table also shows how leverage magnifies the rate of return to equity if the rate of returns to assets exceeds the average interest rate. Although 2 percent is not a very realistic interest rate, it does illustrate how financial leverage can have a beneficial effect on profitability if the circumstances are right.

The amount of financial leverage that a farmer can support depends primarily on the income characteristics of his farm. The lower the level of returns to assets, the lower the debt-servicing capacity. Also, the more variable (risky) the returns to assets, the lower financial leverage should be, since financial leverage increases the variability of returns to equity. Usually, businessmen prefer more stable, predictable income streams to more variable ones. Hence, a high debt/asset ratio for one type of farm may not be so high for another depending on the farms' income characteristics.

Table 1. Rates of Return to Equity under Alternative Interest Rate, Rate of Return to Assets, and Debt/Asset Ratio Scenarios.

Debt/assets (percent)	Average interest rate (percent) 2.0	8.0	10.0	14.0
	-----3 percent rate of return on assets-----			
0	3.0	3.0	3.0	3.0
10	3.1	2.4	2.2	1.8
20	3.3	1.8	1.2	0.2
30	3.4	0.9	0.0	-1.7
40	3.7	-0.3	-1.7	-4.3
50	4.0	-2.0	-4.0	-8.0
60	4.5	-4.5	-7.5	-13.5
70	5.3	-8.7	-13.3	-22.7
80	7.0	-17.0	-25.0	-41.0
90	12.0	-42.0	-60.0	-96.0
	-----4.5 percent rate of return on assets-----			
0	4.5	4.5	4.5	4.5
10	4.8	4.1	3.9	3.4
20	5.1	3.6	3.1	2.1
30	5.6	3.0	2.1	0.4
40	6.2	2.2	0.8	-1.8
50	7.0	1.0	-1.0	-5.0
60	8.3	-0.8	-3.8	-9.8
70	10.3	-3.7	-8.3	-17.7
80	14.5	-9.5	-17.5	-33.5
90	27.0	-27.0	-45.0	-81.0
	-----6.0 percent rate of return on assets-----			
0	6.0	6.0	6.0	6.0
10	6.4	5.8	5.6	5.1
20	7.0	5.5	5.0	4.0
30	7.7	5.1	4.3	2.6
40	8.7	4.7	3.3	0.7
50	10.0	4.0	2.0	-2.0
60	12.0	3.0	0.0	-6.0
70	15.3	1.3	-3.3	-12.7
80	22.0	-2.0	-10.0	-26.0
90	42.0	-12.0	-30.0	-66.0

The level of cash farm income per farm varies considerably by farm type. Different levels of income suggest different capacities to service debt and the degree to which financial stress is occurring. Types of farms generating the highest net cash farm income per farm include vegetables and melon, horticultural specialty, cotton, dairy, and poultry and egg farms with $92,040, $68,156, $63,658, $48,338, and $41,200 in 1983 respectively. On the other end of the spectrum one finds tobacco ($6,663), other field crops ($15,538), cash grain ($22,510), fruit and tree nut ($21,643), general crop farms ($17,718), cattle, hogs, and sheep ($3,599), and general livestock farms ($15,868). Although the distribution of income within each category of farming differs, the average can serve as a general index of debt servicing capacity and provides a useful perspective in considering financial stress by type of farm.

Under most scenarios, a 40 percent debt/asset ratio yields rates of returns to equity which are low to negative. Debt/asset ratios over 70 percent almost always result in negative rates of return. Only very high earnings and/or very low average interest rates provide positive rates of return if one's debt/asset ratio is above 70 percent. Hence, in addressing the issue of financial stress in agriculture, we focus on these debt/asset ratio levels.

Farm Operators Under Financial Stress by Sales Class

The greatest concentration of very highly leveraged farmers occurs in the top sales classes (table 2). Over 15 percent of the farmers with sales of $500,000 or more have debt/asset ratios of 70 percent or more. The percent of operators with very high financial leverage in the $250,000 to $499,999 and $100,000 to $249,999 sales classes is 12.6 percent and 9.2 percent, respectively, In the smaller sales classes, the percentage of very high leverage farmers dropped considerably.

A similar pattern emerges if the focus is broadened to include farmers with debt/asset ratios of 40 percent or above. Roughly 30 percent of the sector's farms with sales of at least $100,000 have debt/asset ratios of 40 percent or more. While these farmers represent only about 5 percent of the total, they account for roughly 23 percent of cash receipts and 24 percent of production expenses. Hence, the balance sheet adjustments and general belt tightening required by these highly to very highly leveraged operators over the next few years could have a substantial impact on agri-business.

Farm debt owed by high to very highly leveraged operators is distributed fairly evenly across sales classes. But, the $500,000 and over sales class has a greater concentration of debt among high and very highly leveraged farmers--30.1 percent percent in the 70-percent-and -over and the 60.3 percent in the 40 percent and over debt/asset ratio categories.

Table 2--Distribution of Farm Operators, Debt, and Assets by Sales Class and Debt/Asset Ratio, January 1, 1984

Sales Class	Very high leverage (debt/asset ratio over 70 percent)	High to very high leverage (debt/asset ratio over 40 percent)
	Percent of Total Operators	
$500,000 and over	15.3	32.7
$250,000 to $499,999	12.6	31.6
$100,000 to $249,999	9.2	27.3
$50,000 to $99,999	8.7	23.4
$25,000 to $49,999	7.9	17.6
$10,000 to $24,999	4.0	11.9
Under $10,000	4.5	12.6
	Percent of Debt	
$500,000 and over	30.1	60.3
$250,000 to $499,999	23.8	52.5
$100,000 to $249,999	20.4	56.4
$50,000 to $99,999	21.9	57.2
$25,000 to $49,999	28.5	52.8
$10,000 to $24,999	23.5	53.1
Under $10,000	21.2	58.1
	Percent of Assets	
$500,000 and over	5.5	16.4
$250,000 to $499,999	5.9	19.5
$100,000 to $249,999	4.3	18.6
$50,000 to $99,999	4.1	16.9
$25,000 to $49,999	3.7	10.0
$10,000 to $24,999	1.8	6.4
Under $10,000	1.5	7.4

Source: 1983 Farm Production Expenditure Survey, USDA.

Farm Operators Under Financial Stress by Type of Farm

At the beginning of 1984, 6.6 percent of all farm operators had debt/asset ratios of 70 percent or more. This is about twice the percentage of farmers which fell into this leverage category four years earlier (table 3). Over 17 percent of all farm operators had debt/asset ratios which were 40 percent or above on January 1, 1984. This compares to 12.2 percent in 1980. Higher farm debt and lower asset values in many regions of the country pushed many farmers into the higher leverage situations. These numbers suggest that between 15 and 20 percent of all farmers are facing financially stressful conditions, requiring decisive steps to restructure their balance sheets to improve cash flow and profitability. A subset of these farmers, numbering between 5 and 10 percent of all operators, are likely experiencing severe financial stress.

Table 3. Distribution of Farm Operators by Farm Type and Debt/Asset Ratio Class, January 1, 1980 and 1984

Farm Type	Very high leverage (debt/asset) ratio 70 percent or more)		High to very high leverage (debt/asset ratio 40 percent or more)	
	1980 1/	1984 2/	1980 1/	1984 2/
Cash grain	4.2	7.6	15.6	21.8
Field crops	4.0	8.9	13.3	20.7
Vegetable and melon	5.0	6.3	13.6	24.1
Fruit and tree nut	1.9	4.0	7.8	11.7
Nursery	4.8	0	14.2	21.7
General crop	2.4	4.6	9.6	11.3
General livestock	2.7	7.1	9.9	17.7
Dairy	2.2	8.7	13.3	26.5
Poultry	5.6	17.7	19.4	35.6
All farms	3.4	6.6	12.2	17.7

1/ Source: 1979 Farm Finance Survey, Census of Agriculture. Data compiled by ERS, USDA. 2/ Source: 1983 Farm Production Expenditure Survey, USDA.

The degree of financial difficulty varies by type of farm (table 4). Poultry, field crops, and dairy farms are the major farm types with the highest concentration of farmers in the very high debt/asset ratio category (70 percent or higher), with 17.7 percent, 8.9 percent, and 8.7 percent, respectively. However, these farmers are earning some of the highest net cash incomes in the sector, tobacco and other field crop farms excepted.

Hence, these higher income farms may not be in as difficult a financial position as other farms with a lower concentration of high and very high leverage operators. For example, cash grain farms have 7.6 percent, and general livestock farms (cattle, hogs, and sheep) have 7.1 percent of their numbers in the very high leverage classification. Meanwhile, the average net cash income for these farms is substantially less than that of poultry, cotton, and dairy farmers.

Table 4--Distribution of Farm Operators, Debt, and Assets by Farm Type and Debt/Asset Ratio, January 1, 1984

Region	Very high leverage (debt/asset ratio over 70 percent)	High to very high leverage (debt/asset ratio over 40 percent)
	Percent of Operators	
Cash grain	7.6	21.8
Field crops	8.9	20.7
Vegetable and melon	6.3	24.1
Fruit and tree nuts	4.0	11.7
Nursery	0.0	21.7
General crop	4.6	11.3
General livestock	7.1	17.7
Dairy	8.7	26.5
Poultry	17.7	35.6
Other livestock	9.1	21.7
All farms	6.6	17.7
	Percent of Debt	
Cash grain	20.8	54.2
Field crops	31.4	58.8
Vegetable and melon	34.6	61.8
Fruit and tree nuts	17.5	35.3
Nursery	0.0	35.9
General crop	25.9	52.8
General livestock	23.1	55.2
Dairy	26.4	63.3
Poultry	52.9	81.0
Other livestock	10.3	59.2
All farms	23.7	56.2
	Percent of Assets	
Cash grain	4.5	18.7
Field crops	6.1	16.8
Vegetable and melon	6.0	18.1
Fruit and tree nuts	2.0	5.9
Nursery	0.0	2.5
General crop	1.9	6.5
General livestock	3.8	13.3
Dairy	6.9	25.0
Poultry	10.4	23.0
Other livestock	1.0	12.1
All farms	3.9	14.5

Source: 1983 Farm Production Expenditure Survey, USDA.

Farms with the lowest concentration of very highly leveraged operators include general crop farms, fruit and tree nut farms, and nurseries, with 4.6 percent, 4.0 percent, and zero percent of all operators carrying very high debt/asset ratios.

If we consider what could be referred to as high leverage operators (debt/asset ratio between 40 and 70 percent), we define a broader group of financially troubled farmers. Poultry, dairy, and vegetable and melon farms have the highest concentration of high and very high leverage operators, with 35.6 percent, 26.5 percent, and 24.1 percent, respectively. Again, the income characteristics of these farms suggest that they can support higher debt ratios than other types of farms. That is not to say that high to very highly leveraged farmers in these categories are not experiencing difficulty. It does suggest, however, that the degree of difficulty may not be as great for these farms as for lower-income farmers with comparable degrees of financial leverage.

Almost 22 percent of all cash grain farmers had debt-asset ratios over 40 percent. This ranks cash grain farmers just below vegetable and melon farms in concentration of high to very highly leveraged operators and, given the lower income earned by cash grain farmers in recent years, suggests that they are among the farms experiencing the most difficult financial conditions.

Although general livestock farms have a relatively low ranking in terms of percentage of farmers with debt/asset ratios over 40 percent, 17.7 percent is still a substantial number, particularly considering the relatively poor income performance of these farms over the past few years. Meanwhile, fruit and tree nut farms and general crop farms had the lowest concentration of high to very highly leveraged operators, with 11.7 percent and 11.3 percent, respectively.

All types of farms have incurred a greater concentration of high to very highly leveraged farms since 1980. This is not surprising given the decline in farm asset values and the relatively weak income situation that has occurred in recent years. Dairy, poultry, general livestock, and vegetable and melon farms experienced the greatest increases in concentration of farmers in the high leverage categories. The smallest increase in the percentages of high leverage farmers occurred among cash grain farms which is somewhat surprising given the sharp drop in farmland values that has occurred in the Corn Belt since 1980.

Over 56 percent of all farm debt is owed by farmers with debt/asset ratios of 40 percent or more. Most of these farmers are undergoing some degree of financial stress and will have difficulty servicing their debt over the next few years. Hence, it is likely that many farm lenders will continue experiencing problems with their agricultural portfolios. Types of farms that deviate substantially from the sector figure include fruit and tree nut farms and nurseries, with 35.3 percent and 35.9 percent of the debt on these farms owed by high to very highly leveraged operators, respectively. On the high side, 81.1 percent and 63.3 percent of the debt on poultry and dairy farms, respectively is owed by high to very highly leveraged farmers.

Almost 25 percent of all farm debt is owed by very highly leveraged farmers. Fruit and tree nut farms, other livestock farms, and nurseries have a lower percentage of debt owed by very highly leveraged farmers. Poultry farms, vegetable and melon farms, and field crop farms have considerable more debt in the very high leverage category.

The highest percentage of assets owned by farmers with debt ratios of 70 percent or more occurs on poultry and dairy farms with 10.4 percent and 6.9 percent respectively. Fruit and tree nut farms, other livestock farms, and nurseries have the lowest percentage of assets owned by very highly leveraged operators--2.0 percent, 1.0 percent, and zero, respectively.

Under the broader debt ratio category of 40 percent or more, dairy, poultry, cash grain, and vegetables and melon farms own the highest percent of farm assets with 25.0 percent, 23.0 percent, 18.7 percent, and 18.1 percent, respectively. Only 2.5 percent of the farm assets on nurseries are owned by operators with debt/asset ratios of 40 percent or more. The comparable figure for fruit and tree nut farms is 5.9 percent.

Farm Operators Under Financial Stress by Region

The highest concentration of very highly leveraged farm operators appears in the Mountain States, Northern Plains, Lake States, and Southeast (table 5). The regions with the lowest percentage of farmers with very high debt/asset ratios are the Northeast (3.9 percent), Appalachian (4.8 percent), and the Pacific States (5.5 percent).

If we consider both high and very high leverage farmers, the ranking changes somewhat. However, the Lake States and the Northern Plains remain on the top of the list, with 22.5 percent and 22.3 percent of the farmers in those regions carrying debt ratios over 40 percent. The Appalachian and Delta States had the lowest concentration of farmers in the high to very highly leveraged category--12.0 percent and 14.0 percent, respectively.

Reasons why the various regions rank where they do are not completely clear. Developments in farmland markets recently do not explain everything. It is likely that the large drop in farmland values in the Lake States and the Northern Plains contributed to the high concentration of farmers in high leveraged situations in those regions. But, while land values were relatively stable in most of the Mountain States, this region ranks high in its concentration of high leveraged farmers. Possibly the importance of the livestock industry explains the high ranking of the Mountain States. On the other hand, several years of drought in the Southeast probably contributed to the high percentage of farmers with very high leverage in this region.

The distribution of farm debt differs markedly from that of operators. Like the type of farm distributions, debt is more highly concentrated in the high leveraged categories than farm operators. This again suggests that farm lenders may also face a difficult financial situation, particularly lenders whose portfolio is dominated by agriculture. Although the Delta States and the Southeast rank low in terms of the percentage of farmers with debt/asset ratios of 40 percent or more, they rank one and two respectively in terms of percent of debt owed by farmers in that

Table 5--Distribution of Farm Operators, Debt, and Assets by Region and Debt/Asset Ratio, January 1, 1984

Region	Very high leverage (debt/asset ratio over 70 percent)	High to very high leverage (debt/asset ratio over 40 percent)
	Percent of Operators	
Northeast	3.9	19.8
Lake States	8.0	22.5
Corn Belt	5.9	17.8
Northern Plains	8.4	22.3
Appalachian	4.8	12.0
Southeast	7.9	15.0
Delta States	6.5	14.4
Southern Plains	6.9	15.9
Mountain	9.1	19.2
Pacific	5.5	15.8
United States	6.6	17.7
	Percent of Debt	
Northeast	17.9	58.6
Lake States	26.5	63.3
Corn Belt	15.6	51.6
Northern Plains	25.9	60.2
Appalachian	25.6	49.7
Southeast	35.6	63.9
Delta States	38.0	64.6
Southern Plains	27.3	52.1
Mountain	24.3	52.7
Pacific	22.5	51.6
United States	23.7	56.2
	Percent of Assets	
Northeast	2.8	15.0
Lake States	5.8	20.3
Corn Belt	3.1	16.7
Northern Plains	5.5	20.0
Appalachian	3.1	9.1
Southeast	4.3	11.0
Delta States	5.1	12.5
Southern Plains	3.1	8.5
Mountain	4.2	14.1
Pacific	2.8	10.7
United States	3.9	14.5

Source: 1983 Farm Production Expenditure Survey, USDA.

category. About 64 percent of the farm debt in those regions is owed by high to very highly leveraged farmers. Over 63 percent of the debt in the Lake States falls in this category.

The Delta and Southeast also have the highest percentage of debt owed by very high leverage farmers--38.0 percent and 35.6 percent, respectively. The Corn Belt and the Northeast have the least amount of debt owed by farmers with very high debt-asset ratios, with 15.6 percent and 17.0 percent, respectively. Apparently, a fairly small number of farmers carry very high debt loads in the Delta and Southeast, producing difficult credit problems for lenders in those regions.

Almost 4 percent of all farm assets are owned by very highly leveraged farmers. But, over 14 percent are owned by farmers that are considered to be either in high or very high leverage positions. The Lake States and the Northern Plains have the highest percentage of assets in both leverage categories--both with about 5.5 percent in the 70 percent and over debt/asset ratio category and about 20 percent in the 40 percent and over debt ratio classification. The percentages in the other regions range from 2.8 percent in the Northeast and Pacific to 5.1 percent in the Delta States for the very high leverage category and 8.5 percent in the Southern Plains to 16.7 percent in the Corn Belt for farmers in the high to very highly leverage class.

The principal implication of the distribution of farm assets is that a significant percentage of the farm assets in many regions of the country, is owned by high to very highly leveraged farmers, many of whom will be under pressure to sell assets to reduce debt and improve cash flow. This suggests continued softness in asset markets in agriculture--primarily those for farmland and machinery and equipment. Some regions are in better shape than others by this criterion. However, with very thin markets for farmland--in normal times only 2-3 percent of all farmland changes hands in a given year--it would not take much land coming on the market to lead to continued weak prices.

Farm Sector Balance Sheet

Changes in the farm sector balance sheet reflect the kinds of adjustments farmers have undertaken to restore their financial condition to a more sound footing. Growth in farm debt continues to be very slow. In fact, total farm debt could drop for the second year in a row. Reducing ones debt servicing obligations is a crucial step in restoring a debt burdened farm business to a viable enterprise.

The value of farm real estate has continued to slide. Nationwide, farm real estate may drop from 2 to 4 percent in value in 1984. Farmland prices are adjusting to a new set of expectations with regard to farm income. After rising rapidly in the seventies when incomes were high, they have been adjusting downward quite rapidly in some areas due to low incomes and expectations of such into the intermediate future.

Farm equity is expected to decline in nominal terms for the fourth consecutive year--the fifth straight year in real terms. It could drop from 2 to 5 percent by year's end. Declining equity means less wealth in the sector and lower borrowing capacity as lenders seek more security to back risky farm loans. This means lenders are going to be less able to exercise forbearance as farmers' equity dwindles, since they must protect their institutions from excessive loan losses.

Table 6--Farm Sector Balance Sheet*

	1984	1985	% Change
		(Billion dollars)	
Assets:			
Real estate assets	764	733-749	-4 to -2
Non-real estate assets	267	270-278	1 to 4
Total assets	1031	990-1010	-4 to -2
Liabilities:			
Real estate debt	112	110-113	-2 to 1
Non-real estate debt	103	101-104	-2 to 1
Total liabilities	215	211-217	-2 to 1
Equity	816	773-799	-5 to -2
Debt-to-asset ratio	20.9	20.9 to 21.9	

* As of January 1.

Delinquencies, Farm Liquidations, and Bankruptcies

Financial stress in agriculture manifests itself in a variety of indicators. A recent American Bankers Association Survey of agricultural banks indicates continued deterioration in such indices as farm loan delinquencies, liquidations, and bankruptcies. The bankers surveyed indicated that after falling from 3.9 percent in June 1982 to 3.7 percent in June 1983, delinquencies on their farm loans rose to 4.5 percent in 1984. The largest increase occurred in the Corn Belt, Northeast, and Lake States. Bankers in the South have experienced declining delinquency rates since June 1982 when they averaged 4.6 percent. In June 1984 delinquency rates at southern agricultural banks were 4.0 percent, according to the survey.

The bankers were asked to indicated what percentage of farmers in their trade area went out of business during the year ending in June. Nationwide, about 3.6 percent of all farmers went out of business during the year ending June 1984. This compares with about 2.2 percent during the previous two years. About 2.4 percent left farming due to factors related to the economic environment, up from 1.4 percent in 1983. It appears that the Northeast, Lake States and the Plains experienced the most deterioration.

The incidence of bankruptcies has more than doubled from mid-1983 to mid-1984 according to the survey. The survey results presents the bankers best estimate of the percentage of farmers in their trade area who have gone through bankruptcy. While still a relatively low percentage, the trend is a source of concern -- rising from 0.75 percent in 1982 to 1.1 percent in 1983 to 2.6 percent in 1984 for the nation as a whole. In spite of their declining delinquency rates, southern agricultural banks

report a sharp rise in bankruptcies to 4.9 percent in 1984 from 1.9 percent the previous year. Given the nature of the survey responses in the South it appears that most of the bankruptcies reported by the banks are associated with customers of other lenders. Although sharp increases in bankruptcies occurred in all the major regions of the country, the South showed the highest level, suggesting considerable stress in some sectors of the region.

1985 Outlook

The outlook for 1985 suggests continued difficulties for highly leveraged farmers and their lenders. A major uncertainty is the dynamics of the adjustment process in farm asset markets. That is, to what extent will farmland prices over adjust due to the current stressful situation in some areas? How will lenders who take possession of farm assets handle their disposition so as not to drive asset prices below equilibrium levels?

Developments of the past few years should continue in 1985. The concentration of high leverage farmers has increased significantly over the past four years, suggesting continued higher than normal rates of farm liquidations. The most vulnerable types of farms include cash grain and cattle, hogs, and sheep farms.

Farm lenders should expect credit problems into the intermediate future. Almost a quarter of all farm debt is owed by farmers with debt/asset ratios over 70 percent. Close to 60 percent of all farm debt is owed by farmers with debt ratios over 40 percent.

There will be continued downward pressure on farm asset values--particularly those of farmland and machinery and equipment. Over 14 percent of all farm assets are owned by farmers with debt ratios over 40 percent. These will have to restructure their balance sheets over the next few years to improve cash flow and profitability. This will require reducing debt and selling assets to generate cash.

RESEARCH PLANNING TO ADDRESS NEW CHALLENGES
IN AGRICULTURE WITH CONSTANT RESOURCES:
AN INDUSTRY VIEWPOINT

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OUTLOOK '85



RESEARCH PLANNING TO ADDRESS NEW CHALLENGES IN AGRICULTURE WITH CONSTANT RESOURCES: AN INDUSTRY VIEWPOINT

GIDEON D. HILL[1]

INTRODUCTION

Thank you for the invitation to relate my experiences and views in research planning for the ever-changing face of the American agricultural scene.

When planning with constant resources, research thrusts must be treated very judiciously. The decision-making process should include an in-depth, selective evaluation of all projects that no longer enjoy the highest priority. At the same time, human and material resources must be redirected to emerging high priority thrusts. Accelerated redirection of resources should address the need to choose new directions wisely, while maintaining the morale of redirected personnel at a high level.

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I am not posing as a spokesman or expert for the agchem industry, for the Du Pont Company or our Agricultural Chemicals Department. My viewpoints reflect one individual's perception of agchem research in the private sector over a 32-year period with emphasis on crop production and crop protection.

During my tenure at Du Pont, our total corporate research and development budget, including fundamental and applied research, increased from $35 million to $1.4 billion - a 40-fold increase. However, I have worked on many programs in our Agchem Department which were conceived and executed during 5 to 10-year periods with annual budgets based on constant-to-slightly increasing dollars. During a 20-year period (1960-1980), we discovered and developed 12 important crop protection chemicals for worldwide markets. In our opinion, this was a highly successful series of accomplishments.

Since 1979, I have been associated with planning a rapidly expanding fundamental and applied research program. this entailed a 2x expansion of scientific manpower in tandem with the construction of state-of-the-art facilities equipped with instrumentation to maximize scientific talent, creativity and productivity.

Are there sufficient similarities and differences between public sector research, especially in ARS, and private sector research in a chemical company to lend perspective to our discussion? I think so!

ARS leaders are responsible for identifying high priority agricultural problems with broad regional, national, and international scope. These problems provide the basis for the national program plan which focuses on the profitability of the agricultural industry and the ready availability of high quality food and fiber for domestic consumption and export.

In the private sector the mission of agchem research is more narrowly focused on the discovery, development, and marketing of effective, safe and economical crop protection chemicals for the primary end user - the grower (agricultural producer) - in the worldwide marketplace.

Although emphasis by both sectors is placed on a mutual target, grower and consumer needs, major differences do exist between private and public sector scientists on how they plan and execute their applied research, and in many instances, their basic research programs.

ASPECTS OF A SUCCESSFUL RESEARCH PROGRAM

The success of research programs can be related to:

(1) Planning and procedures for program management

(2) Creative and productive personnel

(3) Research climate and

(4) Equipment and facilities

My comments, today, are directed primarily to the first three prerequisites for success in research. Our business philosophy is to provide equipment and facilities which are safe, functional, and contribute to a favorable return on research productivity.

PLANNING AND PROCEDURES

In general, the planning, execution and coordination of research with a zero-growth budget is similar to procedures followed with a budget which is increasing 2 to 5 percent annually. Priorities are more difficult to establish and maintain in a zero-growth budget. Less research will be conducted. Hopefully, importance and quality will not be de-emphasized.

The greatest challenges in zero-growth budgets focus on researchers with special attributes and talents. Special leadership skills by management are needed to achieve motivation and direction of the scientists. For example, a constant-dollar budget forces management to decide which projects are more or most important. How do we maintain the morale of scientists whose work has been "singled out" for redirection? Do you terminate an "excellent" scientist because someone less qualified to judge decides his/her research is less important? Do you retain an "average" scientist because someone decides his/her research is more important?

There are specific differences that influence the organization, execution and payoff of research in ARS as contrasted, in general, to the agchem industry and, specifically, to my Department in Du Pont.

A. Since 1972, ARS has employed a complex matrix organization to conduct research.

   1. A matrix organization, especially when used to plan and direct research, can delay timely decision-making and diminish accountability for maintaining a sharp focus on research objectives and payoff.

   2. Efforts are underway in ARS to simplify the top structure of management and focus on the selection of people skilled in research management and leadership.

B. Research in Du Pont is directed by a line management organization with judicious use of the committee system.

   1. Example - Research Scientist -> Supervisor -> Manager -> Director -> Vice President -> Group Vice President -> Senior Vice President.

2. Line management provides the atmosphere for:

   (a) In-depth planning closer to the "grass roots" where the payoff to the agricultural producer is recognized.

   (b) Enlightened selection of research projects that have a good chance for scientific success and a favorable return on investment.

   (c) Quick turn-around on projects that are not viable (days instead of weeks or months) and rapid acceleration of projects that score important breakthroughs.

   (d) Better and more timely communications between middle management and the individual scientist. Research reviews by scientists and supervisors for top management may occur several times annually. This provides a favorable climate for making decisions.

   (e) Timely decisions can be made with a minimum of gray-line cross-checks.

C. Recognition of overall payoff on investment differs markedly in public and private sector research.

1. With public research, the expressions of payoff can be extremely diffuse when presented to the taxpayer. A constant supply of the finest food and fiber to the consumer at the lowest price in the world has become a "given" in our society. The public no longer holds in high esteem these accomplishments by researchers and growers. We must develop more effective messages for Congress and the consumer on the contributions from agricultural research.

2. In industry the final return is measured in dividends paid to the stockholders and rate of growth of the company. Performance is reviewed and reported quarterly and annually.

CREATIVE AND PRODUCTIVE PERSONNEL AND THE RESEARCH CLIMATE

Scientists and a favorable research climate are as inseparable as "ham & eggs" or "pancakes & syrup". For a strong reminder of the importance of "people" in the research equation, visit a research establishment on a weekend when the human factor is missing.

Unfortunately, research performance can be negatively affected by changes in an organization - growth, segmentation, "hardening of the arteries" (1) and eventually reorganization. L. W. Lehr, Chairman and CEO at the 3M Company, has summarized his ideas on motivation and rewards for innovators - the key to renewal of productive research in an organization.

His message "comes through loud and clear":

A. Very few R&D organizations are set up to foster the efforts of truly innovative scientists.

B. Innovative scientists march to their own drummers --- across boundaries --- onto others' turf.

C. Skillful managers are needed to:
   1. Sponsor and protect the innovative scientists and provide a favorable working climate,
   2. Recognize and provide proper rewards for success, and
   3. Supply creative leadership when programs falter. I remind you that a high percentage of all research projects fail. In our applied biological evaluation programs at Du Pont, 90 percent of all compounds submitted to the initial biological screens are essentially inactive and are discarded.

I concur with and further recommend the extension of Lehr's ideas beyond the business world to ARS and academic institutions. An upsurge in research productivity through skillful motivation of scientists to become more creative can be an immeasurably positive asset to research in private or public sectors, large or small organizations, with constant resource or slowly increasing annual budgets.

During the past 6 years at Du Pont we have moved toward a multidisciplinary approach in our basic research and technology programs in agrichemicals research. This program includes such disciplines as: engineering, chemistry, biochemistry, physiology,

agronomy, horticulture, entomology, plant pathology, neurobiology, computer modeling, molecular and cellular genetics, etc. As our scientists have learned to cooperate on mutual projects in adjacent laboratories, we have noted improvements in communication, planning, and solving problems. It works for us!

We do not believe that size of a research group is the paramount or critical answer to solving problems. The challenge is to establish a critical mass which includes the proper choice of talented scientists working together to explore the frontiers of science. The management skills employed to incorporate scientists into research units can be as important as the quality and talent of the specially-selected scientists.

SUMMARY AND OUTLOOK

The agricultural research structures in ARS, academia and industry and the payoff in increased productivity have been envied throughout the world for 75 years. Today, these structures are facing the challenges of the future. Past successes must be expanded and refined to target more economical production per unit basis by the agricultural producer while our data bank of basic information is increased.

The agrichemicals industry has answered the challenge to upgrade its research programs. Composed of about 32 important companies worldwide, this industry is spending an estimated $1.5 billion annually for fundamental and applied research and development. Many fundamental programs which include varying degrees of research in biotechnology are planned or in place.

ARS has gone on record with plans to shift major emphasis from a 50-50 split with applied research to at least 60 percent on fundamentals. I am in general agreement with this approach. However, I strongly urge that adequate plans for applied research be maintained to develop both the short-term and long-term payoffs of these

programs. While there are certain parallels within industry to the research and extension system of the public sector, there is no viable mechanism to enable industry to match or replace the public sector. Industry is not equipped to conduct research and development on a broad basis regionally or nationally. We are willing to do our part but we cannot undertake the development programs maintained by ARS for the past 75 years.

The good news is that industry and the public sector are exchanging ideas and visits and cooperating on research programs at a stepped-up pace. These forward thrusts must be continued and expanded.

My most important points have been reserved for this closing message. Agricultural research in the public or private sector will be successful in direct relationship to:

(a) Adoption of well-defined missions for research in tandem with skillful planning and timely decisions by scientists as close as feasible to the "grass roots" of the problems.

(b) Creation of a research climate that favors and encourages productivity of the innovators - i.e., creating something new and something better for mankind.

No research organization can be successful without motivated scientists who have high morale and believe in their organization.

LITERATURE CITED

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RESEARCH PLANNING TO ADDRESS NEW CHALLENGES IN AGRICULTURE - THE UNIVERSITY'S VIEWPOINT

OUTLOOK '85

Dr. Neville P. Clarke
Director, Texas Agricultural Experiment Station

Annual Agricultural Outlook Conference
Session #15, Washington, DC

For Release: Tuesday, December 4, 1984

The State Agricultural Experiment Stations

*The Hatch Act of 1887 provided the opportunity for a state-federal partnership in agricultural research and, in all cases, an individual agricultural experiment station emerged in every state. As part of the land grant system, these stations are closely involved with counterpart programs of cooperative extension and with the academic programs in agriculture, veterinary medicine, forestry, and home economics. The experiment stations conduct targeted research which produces the knowledge and technology used to both avoid and solve problems of agricultural producers, processors, and consumers of food.

The key conceptual element in the partnership strategy is recognition that the enormous diversity in U. S. climate and geography results in an equally diverse system of agricultural production. The state experiment stations are committed to serving the research needs of this diversified agriculture within the individual states. Not all research needs are totally site specific; some are pervasive. The total system, supported with joint funding, works as a coalition of federal, regional, and state activities to meet national needs as well as state and regional needs.

The structure of research in the experiment stations has three distinct dimensions: (1) geographic location, (2) commodity and resource, and (3) scientific discipline. This structure of research in the state agricultural experiment stations evolved as a result of several interrelated needs. First, the diversity of climatic and geographic conditions has required a degree of site-specificity in agricultural research that, to some, appears as duplication of effort. A number of states, where diversity is extreme, conduct research related to a very large number of

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* Dr. Neville P. Clarke was chairman of the Experiment Station Committee on Organization and Policy (ESCOP) in 1984. During his chairmanship, ESCOP in collaboration with CSRS - USDA published RESEARCH 1984 - The State Agricultural Experiment Stations. Since this paper is presented on behalf of the Experiment Stations, significant portions of the ESCOP publication have been used in developing this paper.

economically significant agricultural commodites and resources. Solutions to contemporary problems require research involving an increasing number of disciplinary specialties applied both separately and within multidisciplinary teams.

In the aggregate, the broad and diverse programs of research in the experiment stations along with related efforts in academic programs and extension fill out the structural framework of the system. This combination comprises the essential agricultural experiment station **base program** of research. The base program is crucial and must be maintained, updated, invigorated, and nurtured for the good of agriculture in the state, region, and country. The base in not static, it is a constantly changing set of individual research projects. The dynamic nature of the base program is difficult to fully appreciate because of low visibility of the smaller programs at the national level. The state agricultural experiment stations continue to place highest priority on maintaining the health and vigor of the base program of research. With a dynamic base program comes opportunity to exploit new initiatives, to meet the challenge of new problems, and to take advantage of new technologies.

The Funding Picture

The U. S. agricultural research system today is supported by a mixture of federal, state, and private monies. Several significant trends have changed the traditional funding patterns in recent years and this is reflected in contemporary budgets on the agricultural experiment stations.

Federal formula monies allocated on the basis of number of farms and rural population within a state (Hatch Act), originally provided the major source of support for state agricultural research. Today, these funds account for a smaller, but important, share of the total research budget in major agricultural states.

Hatch funds provide necessary long-term, stable research support and offer research managers the flexibility to adjust and redirect efforts toward critical issues. These funds offer the greatest opportunity to employ the important linkage in the state-federal research partnership.

A portion of the federal formula funds is targeted for regional research projects supporting joint efforts by states sharing geographic proximity and needs. The total funding involved in regional research in modern times is much larger than the twenty-five percent of formula funds mandated by the Hatch Act.

States funds, originally required to simply "match" federal formula funds, are now the most important source of public funds for agricultural research and total over four times the federal contribution.

Competitive grant monies supplement the larger research effort and are becoming essential for sustaining selected basic research programs. Because of limited resources, the present competitive agencies other than the USDA offer grant monies in areas appropriate for basic agricultural research, SAES scientists are competing successfully for support from these sources. A substantial and broad-based agricultural science competitive grants program is needed to capture new opportunities and implement major multidisciplinary initiatives.

Special grant monies are intended for application on problems perceived by Congress, as requiring immediate attention. The resources for such targeted research are directed to the State Agricultural Experiment Stations. The special grant funds have allowed focus on both broad and site-specific issues over the years and offer a special capability to the Congress for handling specific identified issues.

Private industry participates in agricultural research using two distinct methods; industry may conduct separate and proprietary programs of research or may fund or collaborate in the research efforts of the state agricultural experiment stations.

Opportunity and Challenge

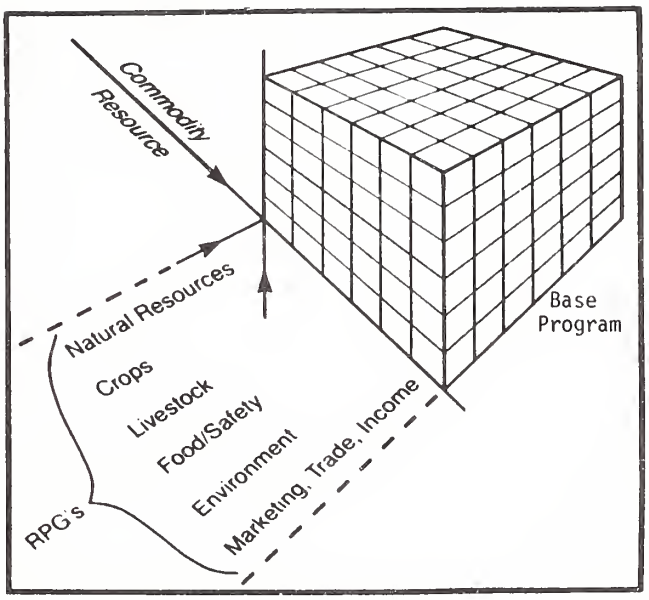
The basic institutional arrangement and organization of agricultural research in the United States have remained essentially the same for over a century. A contrasting aspect of this outwardly apparent sameness is the system's proven internal capacity to recognize opportunity and to respond to challenge. By continuing to mobilize and redirect resources, and to develop new research agendas, the inherent strength of the system's structure has been exploited to produce new knowledge, services, and technologies.

Aggressive marketing can sell an old product in a new wrapper; U. S. agricultural research has, without fanfare, continually improved its product while retaining traditional packaging. Significantly, emerging large-scale societal trends are following the path toward decentralization and local initiative, the historical essence of the U. S. agricultural research system.

Site-specificity is essential if new knowledge and technologies are to be successfully adapted to the thousands of differing production niches that characterize agriculture. By nurturing this distributed system, appropriate scientific response can be made to local problems. The system's diversity offers considerable opportunity to recognize and capture emerging opportunities. Benefits will continue only if the base program is strong and flexible.

The Planning Process

The U. S. agricultural research system consists of interdependent institutions and groups, functioning on the state, regional, and federal levels. The state agricultural experiment stations operate at the grassroots level of this system and provide an entry point for emerging issues. The priority given various issues within the system is affected by differing concerns and perspectives in each separate organization and on each level.

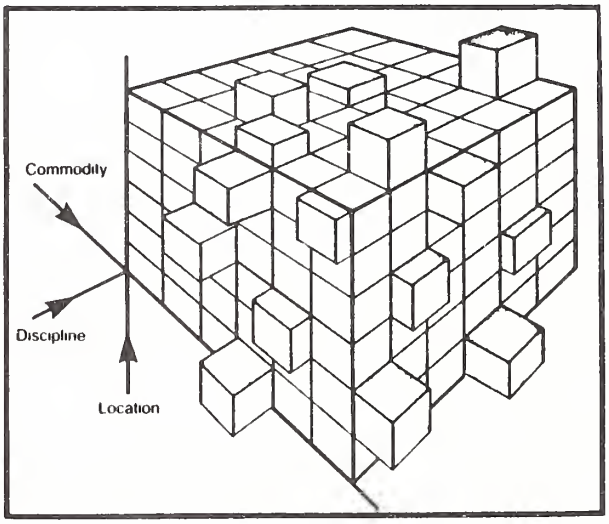


To facilitate communications, a common language, essentially a cataloging scheme, has been devised with sufficient breadth to apply at the federal level, yet retain a sense of specificity of local needs. In this scheme, issues and needs are clustered into Research Planning Groups (RPG's). Using these groupings it is possible to begin the process of generalizing and increasing political flavor which emerges as a national agricultural research plan. Much of this process is internal to the various distributed partners so the vital planning activity has little external visibility.

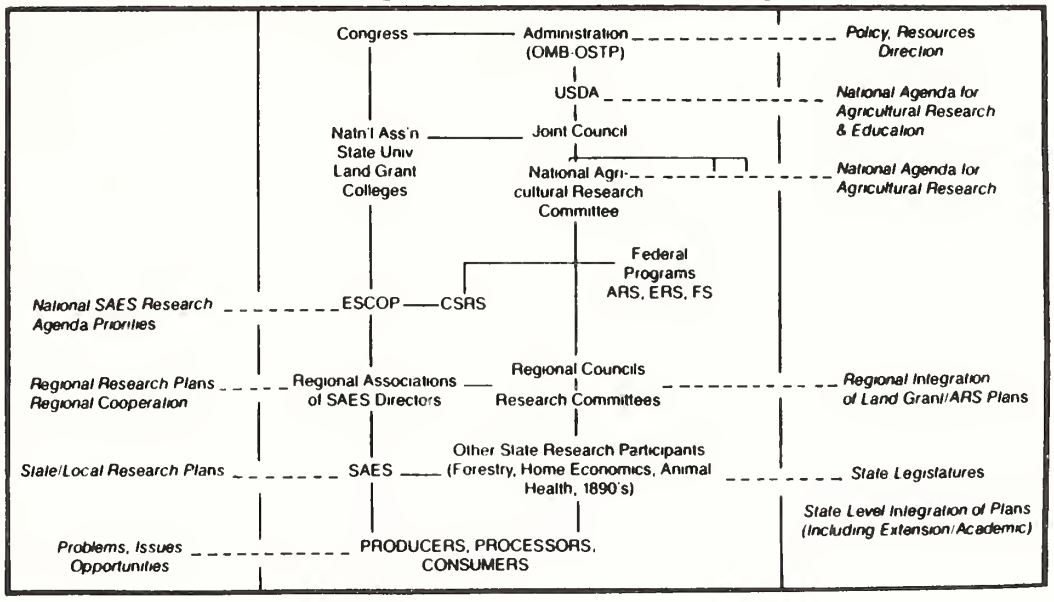
Opportunities for progress and improvement exist for every commodity or resource, within each discipline, and at all locations. Though the individual needs of any single state program become less visible with aggregation and prioritization of broad issues, common or general needs begin to surface. Consideration of broader needs, impact, and costs begins to allow ranking of opportunities beside pressing national needs.

Opportunities emerge from the frontier research programs in the base program. From the multitude of recognized opportunities and issues, priority ranking of goals and needs develops. Ultimately, selected opportunities are melded with needs of the total agricultural research and education system. This success of the system depends on a dynamic base program which has the flexibility and the resources to respond to opportunities as they emerge.

Priority Opportunities



The U.S. Agricultural Research System



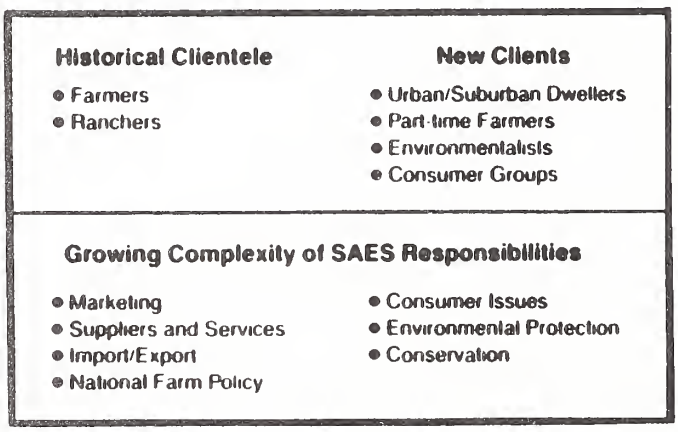
The State Agricultural Experiment Stations are the major entry point within the research system for emerging issues. State plans are aggregated at the regional level and by the Experiment Station Committee on Organization and Policy (ESCOP) and CSRS at the national level. At the state and regional levels, plans of other participants in the land grant system are integrated and taken to the next level. The National Agricultural Research Committee (NARC-part of the Joint Council structure) integrates the federal and state inputs for agricultural research. The Joint Council integrates the total agricultural research and education plan at the national level. The Joint Council and the Secretary of Agriculture receive input from the Users Advisory Board. This overall system, a combination of (1) long standing functions of ESCOP and CSRS and (2) more recent interactions of the Joint Council, has increased its effectiveness recently, particularly as a result of the leadership and focus provided by the new Assistant Secretary of Agriculture for Science and Education.

The ongoing decision-making pattern shapes the general form and magnitude of research response at regional and state levels. Collaborative regional or state action may be appropriate or individual state programs tailored to specific state and local settings may emerge. Regional research is coordinated through the Committee of Nine with interactions at the Cooperative State Research Service to insure continuity, quality, and effective reporting.

The SAESs alter or fine tune programs to accommodate many emerging problems. Issues broad in scope proceed through the system until an appropriate combination of scientists, partners, missions, and resources can be established. Increasing responsibilities and diminishing federal support have forced stringent priority-setting efforts at all levels. At the state level, prioritization is often complicated by unique natural- or economics-related circumstances while political considerations play an increasingly prominent role at higher levels. Increased demands for evaluation and accountability have accompanied shrinking federal support monies.

Bench scientists also play an important role in establishing research priorities. Their determinations of significance, estimate of required resources, and assessment of potential for solution, are essential during priority-setting efforts on all levels of the system.

The bottom-up priority-setting process, a historic strength of the U. S. agricultural system, has been complicated in recent years by incorporating the concerns of new clientele groups with differing interests and values. This situation, coupled to diminishing federal support monies, has placed extreme pressures on the priority-setting actions at every level of the system.



Agricultural Research Priorities

The state agricultural experiment stations research agenda which emerges from the priorities perceived at state, regional, and federal levels addresses two major issues: (1) strengthening the dynamic capabilities of the research system's base program, (2) identifying and capturing priority opportunities.

The Research Programs (RP's) are evaluated and realigned with emerging issues every two years.

RP	Title	RP	Title	RP	Title	RP	Title
1.01	Soil and Land	2.10	Trees, Forest and Forest Production	3.19	Non-Specific Plants	6.01	Farm Adjustment, Prices and Income
1.02	Water & Watersheds	2.11	Forest and Range Resources	4.01	Beef Cattle	6.02	Foreign Agriculture Trade and Economic Development
1.03	Recreation			4.02	Dairying		
1.04	Environmental Quality	3.01	Corn	4.03	Poultry	6.03	Marketing and Competition
1.05	Weather Modification	3.02	Grain Sorghum	4.04	Sheep		
1.06	Fish & Wildlife	3.03	Wheat	4.05	Swine	7.01	Man-made Resources
1.07	Remote Sensing	3.04	Other Small Grains	4.06	Horses & Other Animals	7.02	Technology not associated with Special Commodities, Resources or RPG's
1.08	Aquatic Weeds	3.05	Rice	4.07	Aquatic Food Animals		
1.09	Natural Resources	3.06	Soybeans	4.08	Non-Specific Animals		
2.01	Inventory and Appraisal of Forest Resources	3.07	Peanuts	4.09	Invertebrates		
2.02	Timber Management	3.08	Sugar Crops	5.01	Individuals and Families		
2.03	Forest Protection	3.09	Forage, Range and Pasture	5.02	Living Environment	8.01	Human Nutrition
2.04	Harvest Processing and Marketing of Forest Products	3.10	Cotton & Cottonseed	5.03	Communities Institutions and Services	8.02	Food Processing
2.05	Forest Watersheds, Soils, Pollution	3.11	Tobacco	5.04	Insects Affecting Man	8.03	Food Safety
2.06-2.09	Forest Amenities and Alternate Uses	3.12	New Crops and Minor Oilseeds	5.05	Research on Administrators of Research	8.04	Food Storage, Distribution and Marketing
		3.13	Fruits & Nuts			8.05	Food Service
		3.14	Vegetables Crops				
		3.15	Natural Beauty				
		3.16	Bees				
		3.17	Weeds in Crops				
		3.18	Seeds				

Emerging from a myriad of recognized opportunities are several significant priority opportunities offering substantial return on investment and addressing critical national issues:

Biotechnology - Research is moving the agricultural production system towards a new science based on the capacity to manipulate and modify plants and animals, using recombinant DNA and other new technology.

Electronic Technology - Rapidly developing electronic technologies are adding capacity and new capabilites to modern research. The incorporation of computer technology in agricultural production also offers significant new management and communications tools.

Natural Resources - New technologies, incentives, and production systems must be devised to increase efficiency of resource use and encourage conservation of natural resources.

Food - Safe and wholesome foodstuffs are major national concerns. Improved production practices, new storage and preservation techniques, and thorough understanding of nutrition are pressing research needs.

Environment - Substantial need exists for full ecological understanding of agricultural production system components and increased awareness of social implications in technology development.

Agricultural Policy and Foreign Trade - Maintenance of strategic agricultural strength requires a federal policy which links the economic strength of agriculture, production efficiency, with the best potential markets, export sales.

Enunciating the State Agricultural Experiment Stations' Viewpoint

The need for a more effective and more creative methodology for enunciating the view of the state agricultural experiment stations on the National Agenda for agricultural research has been a topic of discussion at every meeting of ESCOP in the past year. It has been the subject of a number of external reviews of the overall agricultural research planning activity. The administrator of CSRS and Assistant Secretary Orville Bentley also have strongly endorsed the need for a more effective planning process, one which would complement the planning activity that is presently conducted in the Joint Council.

The process being set in motion makes maximum use of the existing planning activity; that associated with the Joint Council at the regional and national levels as well as the present process of forecasting shifts in resources by each individual station through using the format of the CSRS system.

The planning methodology that is being implemented beginning with the 1984-85 year contains the following key elements:

1) Joint membership of individuals will be sought between a new planning subcommittee of ESCOP and present assignments in Regional Joint Councils and the National Agricultural Research Committee, a part of the Joint Council process. This will assure maximum coupling and minimum duplication of effort.

2) The Regional Associations will develop research initiatives that address the needs of the region in a broad sense. These initiatives would be configured so they might either stand alone as regional initiatives or ultimately be combined with similar initiatives from other regions to constitute overall national research initiatives.

3) The Planning Subcommittee of ESCOP will include representatives from each of the regional planning committees and will address itself to the further refinement and consolidation of the research initiatives that emerge from the regions. The Planning Subcommittee of ESCOP will also seek broad input from the research community to identify national issues that will be referred to the regional associations for further discussion and reaction. This interactive process over time should identify a set of issues that represent the overall consensus of the state agricultural experiment station community.

4) Parallel to this effort will be a new effort to show the dynamic nature and the changing distribution of resources within the existing base programs of agricultural research in the various regions and individual states. This effort will consist of defining the kinds of information that might be extracted from the CRIS system to examine retrospectively the dynamic nature of the base programs of research underway in the states and to develop a method, using the CRIS format and building on our existing system of forecasting, to better portray the need for long-term plans of the individual states.

5) In the early stages, the Committee will: (1) examine the research initiatives as presently defined by the Regional Associations, (2) reflect on the several national level studies that have dealt with the research planning process in recent years, (3) engage some of the scholars and other thinkers both from inside and outside the land-grant system to obtain their recommendations, and (4) emerge with a more thoroughly described planning methodology and a preliminary planning agenda with the major research initiatives identified.

6) As major initiatives make the transition from the planning process to the budget process, we envision the production of several white papers describing, justifying, and advocating the initiatives.

Philosophy of Budget Building

Situation

The present situation regarding federal funding for agricultural research is characterized by a number of factors which need to be considered in developing a philosophy for budget building. These are:

1) Projections for severe budget constraints.

2) The Joint Council process is presently in place and appears to be the most likely mechanism through which new budget initiatives will be expressed.

3) The new initiatives process appears to be a model for future budget advocacy.

4) Obtaining across-the-board increases for formula funding appears to be difficult to achieve without a new strategy.

5) There is a growing national visibility and recognition of the importance of agricultural research in the broad science and technology arena.

6) There is growing administration support for research and development, including agriculture.

7) There is a major emphasis on high technology in which agricultural research can participate.

8) There are mixed congressional attitudes regarding the needed amount of agricultural research funding as well as the mechanism to be used in providing these funds.

9) In the coming year, a study of the peer review process in funds appropriated to the USDA will be initiated and may ultimately impact the awarding of federal funds for agricultural research.

Projections and Pathways

The funding situation is uncertain in the short run, with a number of possible scenarios including a no growth situation, reductions in federal funding for agricultural research, and the possibility for exceptional increases. It also appears unlikely that major increases in formula funds will be achieved; but increased earmarking of formula funds is a distinct possibility. Most people believe we can expect to see some continued congressional initiatives for special grants, although NASULGC continues to support general, broad programs. Regarding competitive grants, there has been (generally speaking), in recent history, a positive attitude on the part of the administration and the scientific community, and a mixed reaction from Congress.

Key Elements in the Advocacy Process

As one looks both historically at the strengths of our present system and prospectively at the emerging situation with regard to budgetary constraints, there are a number of key elements that will probably have to be present for a successful budgetary advocacy.

1) Strengthening the external perceptions that the State Agricultural Experiment Stations have a good scientific game plan.

2) Establishing a credible method for justifying and expanding the base programs with formula funding.

3) The development of methods for achieving consensus within the SAES community on the priorities for new initiatives.

4) Providing improved methods to take a more proactive role in the budget development process, that is to say, participating in setting the agenda rather than reacting to the agenda.

5) Establishing and strengthening well-developed linkages between the planning and budget process.

6) Developing a better capability to respond in a credible and timely way to the dynamic situations that present themselves during the course of the budget development process.

Conclusion

The State Agricultural Experiment Stations have been involved in the planning of new research over the years, generally speaking, with a process that captures the initiative and imagination of scientists at the working levels, addresses the separate and aggregate needs of the industries in the various states. The planning process includes regional assessment of needs and statement of objectives as well as the planning and execution of regional research within the four regions of the United States.

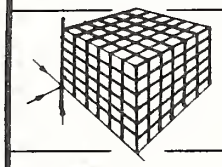
The Experiment Station Committee on Organization and Policy has recently adopted new planning methodology which will enhance the ability of the State Agricultural Experiment Stations to enunciate a research agenda that represents the State Agricultural Experiment Stations at the national level. This research process will show the dynamic nature of the changes that occur in the base program of research in each of the states as well as to identify the major new initiatives which have reached a point in time sufficient to be candidates for new research funding at the federal level.

The Joint Council has provided an excellent platform for articulating the needs of agricultural research at the national level. The planning process of the State Agricultural Experiment Stations feeds into this total planning process.

The State Agricultural Experiment Stations, notwithstanding the concern for expenditures in the federal budget, are unwilling to accept the position of research planning with "constant resources". It is the contention of the State Agricultural Experiment Stations that the needs for agricultural research have never been greater than they are today, nor have the opportunities to contribute meaningfully to the needs for new knowledge and technology ever been greater than they are today. The intersection of need versus opportunity has come at a point in time where, regardless of the shortage of resources, the State Agricultural Experiment Stations expect to compete and to acquire new resources in order to meet the new needs and to take advantage of new opportunities.

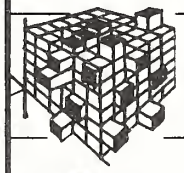
The National Agricultural Research Agenda

The SAESs



The Base Program (RPGs)

- **Crops**
- **Livestock**
- **Natural Resources**
- **Environment**
- **Food Safety**
- **Marketing, Trade, Income**

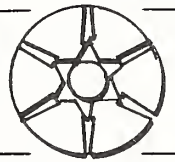


Priority Opportunities

- **Biotechnology**
- **Computer Technology**
  - **Risk Management**
  - **Marketing**
  - **Communications**
- **Natural Resources**
  - **Production Systems**
  - **Conservation**
  - **Use Efficiency**
- **Food**
  - **Safety**
  - **Nutrition**
  - **Storage**
- **Environment**
  - **Special Issues**
  - **Agricultural Residue**
  - **Biocontrol**
- **Agriculture Policy/Foreign Trade**

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ARS



Program Plan

- Plant Productivity and Quality
- Animal Productivity and Quality
- Soil and Water Conservation
- Integration of Systems
- Adequate Human Nutrition
- Commodity Conversion and Delivery

Six-Year Plan Emphasis

- Integrative Systems
- Commodity Conversion and Delivery
- Human Nutrition
- Soil and Water Conservation
- Efficiency of Production

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Other Federal Research Partners

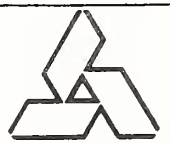
- Forest Service
- Economic Research Service

Other State Research Partners

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The Sum of the Parts

Joint Council



Research Agenda

- Basic Biotechnology
- Communications Technology
- Sustaining Soil Productivity
- Water Management
- Forest, Range, Pasture Productivity Enhancement
- Analysis of Price and Income, Policy, and Foreign Trade
- Human Nutrition
- Scientific Expertise Development

USDA RESEARCH PLANNING: ADDRESSING NEW CHALLENGES WITH CONSTANT RESOURCES

OUTLOOK '85

Dr. Terry B. Kinney, Jr.
Administrator, Agricultural Research Service

Annual Agricultural Outlook Conference
Session 15, Washington, D.C.

For Release: Tuesday, December 4, 1984

This afternoon, I want to talk about reality--economic reality--and how my Agency, the Agricultural Research Service, perceives that reality as it develops plans and policies for the future. We are all living in the shadow of a towering budget deficit that will continue to dictate a policy of fiscal constraint for many years--probably decades--to come. Recognizing that climate of constraint--and finding ways to adjust to it--is half the battle.

Old habits are hard to break. My Agency was very comfortable during the 50's and early 60's, when resources--primarily funding--were increased in real terms each year. Since 1965, however, our ARS budget has been flat or constant after adjusting for inflation.

But, we remember the good old days. And, like Charlie Brown's little friend Linus in the pumpkin patch at Halloween time, we have hoped that the great pumpkin of fiscal plenty will rise again one of these years. Only recently have we begun to recognize that major increases in our budget are not likely in the near future--if ever.

So, about four years ago the Agricultural Research Service decided to plan for the future in terms of a fixed-size organization, rather than an expanding organization. We realized that the universe may be expanding, but not the ARS budget.

We had a lot of encouragement to rechart the course of the Agency. You will recall that ARS has been the subject of a number of critical studies that have been published over the last few years.

In July 1981, the General Accounting Office submitted a study which concluded that the U.S. agricultural R&D system does not perform national long-range planning and that the USDA/State programs are independently planned.

The Office of Technology Assessment submitted a study in December of 1981. The OTA study noted that the USDA research expenditures are proportionately the smallest of any major Federal research agency.

The Winrock Conference, held two and a half years ago, provided a summary of key issues confronting the agricultural research community. In a published report, the Conference noted that many factors have "greatly exacerbated national institutional resistance to change, resulting in excessive parochialism and preoccupation with institutional protection and maintenance."

The Conference went on to point out that inadequate attention has been given to identifying critical research needs and to developing institutional relationships to bring about needed changes.

Most recently, we had to deal with the O'Kane Report. At the March 22 appropriation hearings, Mr. Whitten included some comments for the Congressional Record summarizing the O'Kane Report, which had been conducted at Mr. Whitten's request.

* The Report said that ARS has been in a decline.

* The Report faulted ARS for a lack of national leadership goals.

* The Report said that ARS lacks priorities and accountability.

* The Report said there is a publish-or-perish syndrome in ARS that hinders scientific investigations.

* And, the Report said that ARS is in need of a technology transfer unit, among a few other things.

Let me say that when you work for a Federal agency, and a Congressional Appropriations Subcommittee reads this kind of a litany, it gets to you.

I suggest to you that sometimes ARS is the up-front whipping boy because it's just about impossible to take on the fifty-plus universities in the land-grant system. I suggest that ARS has to take the brunt of the criticism, but the criticism is not specific to ARS. It is a criticism of the whole American agricultural research system. I suggest that many research organizations have been on high calorie diets, and excess weight is not fashionable! I can assure you, when it comes to criticism, we've been there.

So, partially in response to these pressures and observations, we decided that ARS would be managed by a national plan--not by a compendium of plans--and that national plan would incorporate a constant dollar or flat budget projection as the underlying assumption.

Of course, there were other factors that prompted the ARS planning effort:

* Overlapping roles of Federal, State and private sectors;

* Working on too many things at too many locations;

* Restraints on research budgets because of the state of the economy;

* Commodity surpluses that increase our need to export;

* Higher farm costs and lower profits;

* Dwindling resource base;

* Our basic knowledge storehouse is becoming inadequate; and

* There is a new era of biotechnology, with potential breakthroughs significant to agriculture.

All of these factors emphasized the need for a national research program plan to contribute to the long-term stability of American agriculture.

Beginning in the fall of 1981, we carried out an intensive planning effort. With input from some 500 scientists, the National Program Staff developed the ARS Program Plan. This long-range plan, published in January 1983, established a goal for ARS research and specified objectives and approaches for reaching that goal. This document also specified organizational plans to guide the implementation of the plan.

Last February, the 6-Year Implementation Plan was published. It specified the areas of research which ARS would emphasize and deemphasize in the short-term future. Projections were based upon constant dollar funding assumptions. By this, I mean that intended increases in funding were equaled by intended decreases in funding.

This constant-dollar funding assumption forced the very difficult decisions that had to be made. Decisions had to be made about which programs would expand and which programs would receive less support or be drastically cut. This document has provided the basic guidance for year-to-year budget development and research planning.

The projects in the ARS Program Plan reflect our emphasis on mission-oriented, fundamental, long-range, high-risk research. They also reflect our responsiveness to action agencies, user groups, and the U.S. Congress. The Plan includes six objectives that form the ARS program strategy: research to improve soil and water conservation; plant productivity; animal productivity; commodity conversion and delivery; human nutrition; and integration of systems.

Since June 1981, ARS has reduced overhead by almost 12 million dollars. Put in other terms, overhead costs are now about 10 percent of our budget. Less than 3 years ago, they amounted to over 15 percent. By using these savings and other management-derived funds, ARS will permanently increase its research programs by approximately 14.5 million dollars. A major portion of these funds is being targeted for biotechnology research programs.

It is the task of management to review every project periodically to make sure the hoped-for results will be worth the capital investment and whether the objectives are still of the highest priority.

Such decisions frequently mean moving money and people around--and upheavals are never very popular with the people concerned. But this kind of careful management is essential at a time of tight budgets, and it is always appropriate in a public agency using public funds.

I think we have to recognize that not everyone is going to play a key role in every activity. This point has certainly been made before, but I believe that all research organizations must spend more time planning together--deciding which groups should be responsible for which research. Difficult? Yes, but today we see too many research organizations competing for the same dollars. This process is very divisive and often results in the inefficient use of available funds. At the federal level, this competition for funds can be an unqualified disaster!

In getting the maximum use from every research dollar, the future presents at least as great a challenge for managers and administrators as it does for researchers who are carrying out the scientific objectives.

Now, I want to make some general comments about the strategy of developing acceptance for a plan and the planning process.

First of all, it is necessary to create an atmosphere that is conducive to action and which supports a coordinated planning effort to address each problem. In the case of ARS, I suppose we owe a debt of gratitude to the critics who created all the sound and fury over the last three years. If it hadn't been for all those studies and reports articulating our problems with numbing regularity, an atmosphere might never have been created which prompted our coordinated planning effort.

Second, it's necessary to develop a logical procedure for creating the plan. The most logical procedure will probably not be accepted as appropriate or unbiased by those interests who see themselves at a disadvantage. It boils down to the old question of "Whose ox is going to be gored?"

It follows that with any plan of action, there will be winners and there will be losers. In the process, the plan becomes an orphan.

Let me explain. We knew those who were going to lose would do everything possible to defend their activity and be unsupportive of the planning process. But, we didn't realize that those who were going to win would behave in a very quiet and passive manner--like a poker player with four-of-a-kind--and also fail to support the process. The process ends up an orphan, unclaimed and unloved.

Then, when you bring in the outside political interests--the commodity groups, the consumer groups, the Congress, State and Federal cooperators, and industry--we wonder if it is worth the effort.

But, of course, the effort is worth it. It can be done, and ultimately logic and persistence will prevail.

Eventually, a plan that is soundly based and carefully developed will enhance the credibility of the organization and bring it increased support. In other words, credibility gets support--it's as simple as that.

On May 30, Mr. Whitten submitted a report which accompanied H.R. 5743, the bill appropriating funds for Agriculture, Rural Development, and Related Agencies for fiscal year 1985. On page 22 of that report, he said simply, "The Agricultural Research Service is the finest agricultural research organization in the world." I can't improve on that.

Now, let me suggest four points that we found to be absolutely essential to the planning process.

First of all, it is necessary to clearly review, define, and express the mission of the organization--any research organization.

Second, develop criteria that will be used in evaluating the research in the programs. These criteria help to determine whether or not the program fits within the mission.

Third, develop criteria that determine whether the program enjoys a high priority with users. This can only be accomplished after having first established a close working relationship with the user groups.

Finally, develop criteria to determine the potential for success. What is the likelihood of a significant pay-off?

The science of agriculture is undergoing dramatic changes. I suggest that agricultural research organizations and programs that attempt to maintain the status quo will suffer eroded credibility and diminished support.

Collectively, we have to make the national agricultural research system responsive to the climate of fiscal constraint. Increased support will come only when we can assure our users and our leaders--at the State and federal levels--that we know the problems and that we are working on their solutions with lean and efficient organizations. I can assure you that problem-oriented programs that are productive, well-designed, and efficiently organized will attract support!

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Annual Agricultural Outlook Conference
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OUTLOOK '85

FUTURE APPLICATIONS OF BIOTECHNOLOGY

Recent advances in biological research-- often referred to as the new biotechnology-- have or will impact dramatically on industrial production and agriculture. For example, many existing products such as insulin can, or will be, produced more efficiently and with less energy. Furthermore, new products have been, or will be, developed to meet specific needs such as herbicide-resistant varities of crops. This presentation covers future applications of biotechnology to the plant side of agriculture. Dr. Gorham will be discussing the animal side and Dr. Graham will follow with the industry view.

If the 1970's are considered as the years of the microchip than the 1980's may be considered as the years of biotechnology. Significant advances in biochemistry, genetics, and cellular and molecular biology as well as the art and science of tissue culture have placed industry and agriculture on the verge of new discoveries and new products. As you will hear today, some products produced by the new biotechnology are on the market. However, it is the future uses that we will emphasize in this panel.

In a panel discussion on biotechnology, it is necessary to define a few terms. It has been the practice to divide biotechnology into two categories as follows:

- o Old biotechnology.
  Example: Using yeasts to make wine

- o New biotechnology.
  Example: Using yeasts modified with recombinant-DNA to produce wine with a higher alcohol content.

This division does not really arrive at a meaninful and useful concept.

A recent compilation of definitions of biotechnology by 11 institutions or agencies in North America and Europe showed 9 different definitions. If these definitions were distilled down and the residue examined, they would produce a consensus definition which is similar to one used by the Office of Technology Assessment, U.S. Congress, and the USDA as follows:

Biotechology is any technique that uses living organisms or parts of living organisms to -

- o make or modify plant products
- o improve plants and animals
- o develop microorganisms for specific purposes

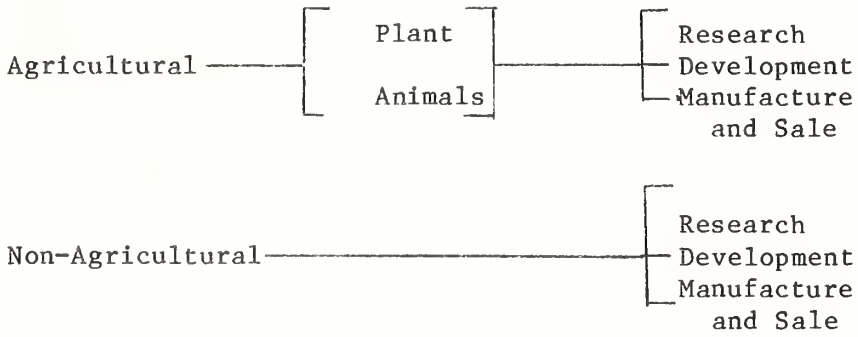
Several definitions regarding genetics are useful in understanding biotechology concepts.

- o Genetics -
  Manipulation of plant and animal heredity and variation
- o Classical Genetics -
  Manipulation by procedures which occur in nature or in conventional breeding
- o Genetic Engineering -
  Manipulation by novel procedures such as:
  - cell culture or fusion
  - recombinant DNA engineering
    Combining DNA different sources to alter the hereditary apparatus of living cells. The DNA segments may be moved from one organisms to another by vectors such as viruses, bacteria yeasts, or plasmids.

To obtain a better understanding of recombinant-DNA technology, one may compare this technique with football.

COMPARISON FACTORS	ACTIVITY	
	Football	R-DNA Engineering
PATHWAY Donor ↓ Vector Recipient	Center ↓ Passer Receiver	Gene Source ↓ Microoganisms Gene Recipient
BENEFITS	Yards Gained	New Products Improved Plants
RISK	Fumble, Interception	Environment
REGULATION	Refereee	Federal Government

The uses of biotechnology and the various phases of developing a product are shown below:



Ice-nucleation-negative Bacteria

Bacteria known as ice-nucleation-positive bacteria contribute significantly to frost damage on susceptible plants. These bacteria are residents on or below plant surfaces and serve as the nucleus or center for the formation of ice crystals at 32°F. Certain bacteria, known is ice-nucleation-negative bacteria, do not promote ice crystal formation until the temperature reaches 27°C. Scientists have demonstrated that if they spray plants with ice nucleation-negative bacteria early in the growth of the crop, these bacteria will occupy sites that might have been filled by naturally occuring ice-nucleation-positive bacteria. Thus, when temperatures reach 32°F, the frost susceptible plants do not show frost damage. When temperatures eventually reach 27°F, the plants are damaged. Meanwhile, the growing season may be extended 2-to-4 weeks; thus, increasing yields. Bacteria may be genetically engineered so that they lose the ability to foster ice development at 32°F. If these bacteria are then mass produced and packaged in a form that farmers can use to spay crops, yield will be significantly increased. The product is in the development stage.

Nitrogin-fixing Bacteria

Bacteria in the genus Rhizobium and many leguminous plants (such as beans, soybeans, alfalfa, and clover) develop an association in which root nodules are formed. These nodules serve as "micro-fertilizer-factories". Nitrogen from the air is fixed by the bacteria into forms available for use by the bacteria and the host. Farmers may now purchase bacterial products to add to the soil or they may plant legume seeds inoculated the bacteria. Scientists can use recombinant-DNA genetic engineering to improve the performance of existing bacterial strains. However, even more signifcantly, scientists, through genetic engineering are attempting to develop strains of bacteria which will incite nodules on non-leguminous plants such as maize. Conversely, they are also attempting to engineer maize plants to accept the existing strains of nitrogen-fixing Rhizobium.

Mineral-leaching Bacteria

Biotechnology has discovered bacteria which produce and secrete organic acids. These acids dissolve phosphorous and sulfur from rocks; thus, providing these elements in a form available for use by plants. Other miccroorganisms contribute to the release of iron and aluminum phosphates. If the concept can be made practical at the farmer's level, the cost of crop production will be reduced and fossel fuels conserved.

Developing seeds with high protein levels

Seeds are consumed by man and animals. These seeds have certain levels of protein as determined by the genetic make-up of the plant. It will be possible by genetic engineering to incorporate genes which code for seed-storage proteins. Therefore, the level of proteins in the seed may be raised to improve human and animal nutrition. For example, the gene that codes for protein storage in beans has been transformed to the genetic system in sunflower so so that sunflower seeds have higher level of protein.

Disease detection probes

By cloning recombinant-DNA, scientists have been able to develop sophisticated procedures which detect some viruses and viroids at very low levels of concentration in plants. Scientists also been characterizing agents by procedures known as "finger printing." Monoclonal antibodies, protein blot procedures, and other tools have been developed by biotechnology research. In the future their use will be expanded to other agents and to a wider spectrum of pathogen/ host interactions.

Plant Cell and Tissue Culture Technology

Tissue culture is the art and science of growing animal or plant cells on an artifical medium such as agar plus nutrients. The technology has been useful for basic researh at the cell level, for various forms of genetic engineering, and for various forms of cloning particularly with plants.

While plant and animal cells can be cultured, only plant cells have been shown to have totipotentey-- the ability to generate an entire functional plant from a single living plant cell. Thus, for many species, for which a satisfactory medium has been developed, any living root, stem or leaf cell has all the genetic material necessary to produce an entire plant. On the other hand, if animal cells possess the entire genetic complement, it has never been turned on so that kidney cells on artifical medium continue to produce kidney cells.

With cell fusion it may be possible to fuse cells from plant species which could not be crossed by conventional pollen transfer techniques either naturally or artifically and thus provide genetic diversity. These techniques and their application are discussed in in reference cited at the end of this paper.

Genetically engineered Plants

In addition to genetic engineering through tissue culture techniques, plants may be engineered by recombinant-DNA techniques In these procedures, a vector often a bacterium or a plasmid, is used to move beneficial genes or parts of genes to another plant. Research is underway in the following applications to develop plants resistant to biological or environmental stresses.

- o Biological stress
  - pests
  - diseases
- o Environmental stress
  - drought and flooding
  - alkaline or acid soils
  - fertilizer deficient soils
  - excessively hot or cold climates

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FUTURE BIOTECHNOLOGY APPLICATIONS - ANIMALS

OUTLOOK '85

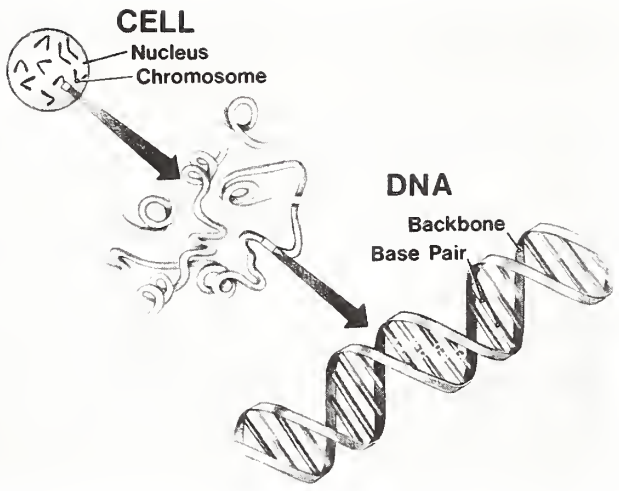
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The control of disease and improvement of animal production determines the economic well being of the livestock industry. The remainder of this century will herald the development of new and improved products and procedures to increase the efficiency of livestock utilizing the remarkable advances in biotechnology.

This presentation focuses on: 1) the diagnosis of infectious and genetic diseases, 2) the new "high tech" vaccines, 3) new treatments, and 4) new procedures for the genetic improvement of livestock. I will attempt to provide a quick update on some current research. While it is always hazardous, I would like to speculate on some future applications in this fast moving and exciting field.

DNA, the source of all the excitement, is packaged in the cell's chromosomes and resembles a twisted zipper. The teeth of the zipper consists of 4 subunits of DNA (bases) that always fit together in a precise fashion. A gene, actually a piece of DNA, comprising of hundreds or thousands of bases that dictates the assembly of amino acids in the making of a protein. The first step in DNA's replication is "unzipping" of the two long strands.



DIAGNOSIS OF DISEASE

Currently, there are two main methods being exploited for disease diagnosis: 1) DNA probes and 2) monoclonal antibodies.

The diagnosis of disease took a giant step forward with the advent of DNA (gene) probes. When DNA is "unzipped" into two strands, each strand will only match up and bind with its complementary half. A DNA probe is a segment of one DNA strand that is used to search in the tissues of an animal for viral or bacterial genes or a defective gene in case of a hereditary disease.

Viruses and bacteria are complex organisms. An infected animal responds by producing several different kinds of antibodies. In many instances, such a mixture of antibodies does not allow precise identification of the inciting organism using conventional methods. In a recent

widely publicized Salmonella outbreak, epidemiologists used gene probes to pin-point tetracycline resistant Salmonella newport.

Gene probes can detect minute amounts of DNA. If we could determine whether an animal has cleared its tissues of a particular virus or bacterium it would provide new insight on the control of diseases such as bluetongue, bovine leukosis, brucellosis, equine infectious anemia, pseudorabies and many others. It is safe to say that DNA probes eventually will be used for any disease where an agent persists in the host.

Scrapie is a slow, presumably viral, disease with a course measured in years. Presently, there is no way to identify infected sheep at any stage of infection. A test to detect the causative agent in carrier sheep would be of real help to disease control officials.

Another use of DNA probes is the detection of animals that are carriers for undesirable genetic traits. While there are thousands of genetic diseases affecting domestic animals, I will use as an example a disorder called combined immunodeficiency in Arabian horses. Affected foals have no immune system and invariably succumb. It has been estimated that about 2% of Arabian foals in the United States die of this disease and that the frequency of Arabian horses in the United States that carry the genetic defect is approximaely 26%. Presently, there is

no way to detect carrier horses until they produce an affected offspring.

Perhaps you have seen dipsticks that are employed to diagnose sugar or albumen in urine. What will the future bring? A handy-dandy gene probe that detects a bundle of cattle diseases? Just dip it in a drop of blood and if you get a signal, such as a color change, you have a diagnosis. Maybe we will have gene probes for the home as well to detect the bacteria that causes botulism in a can of beans or staphylococcal food poisoning in cream pie.

In the distant future, we will have gene probes for the packing industry. A vacuum cleaner will suck up bits and pieces of tissues and blood from a carcass into a detector that contains a whole battery of super-sensitive gene probes. We are not even close to developing these simple probes, but they are our ultimate goal.

This year Köhler and Milstein received a Nobel prize for the discovery of monoclonal antibodies. They fused antibody producing cells with cancer cells. Each fusion results in the production of hybrid cells that serve as factories manufacturing large amounts of a single pure antibody. Monoclonal antibodies provide reliable diagnostic results and reproducibility that could not be obtained with conventional antiserums.

One of the most useful applications of monoclonal antibodies is for the diagnosis of disease. Speed is always important. For example, in the instance of food processing companies, food must be stored until the test results are

final. When dealing with bacterial contamination, it takes a couple of days by present day laboratory procedures to come up with a diagnosis. We should be able to reach a diagnosis in a matter of hours using monoclonal antibodies.

"HIGH TECH" VACCINES

One of the greatest uses of biotechnology will be in the preparation of vaccines. For the balance of this century, several new methods for making vaccines will be employed. These methods are in their infancy and there are plenty of growing pains. Foot and mouth disease virus is the subject of recombinant DNA vaccine research. Work at the ARS Plum Island Animal Disease Laboratory and Genentech has led to the production of the immunizing protein VP-1 by joining the DNA of foot and mouth disease virus with the DNA of the bacterium E. coli. While their work is on the forefront of recombinant DNA research, other ARS laboratories, commercial laboratories, and academia are busily cloning other disease agents in hopes of coming up with vaccines that do not have the inherent danger of live vaccines or the limited potency of the present killed vaccines.

Prospects for the development of parasite vaccines were enhanced with the publication of cloning of the major surface proteins of malaria. The proteins that induce immunity are potential vaccines. Researchers at Washington State University and elsewhere are in the midst of identifying and isolating surface proteins of anaplasma,

Babesia, and liver flukes for production by cloning in bacteria for eventual vaccines.

A synthetic vaccine is another example of a "high tech" vaccine. On the surface of viruses, there are proteins (peptides) that stimulate an animal to produce antibodies and cellular resistance. Laboratory workers have determined what amino acids and in what sequence they are required to make an effective vaccine. Synthetic peptide vaccines have been made against foot and mouth disease, hepatitis A and human influenza. Synthetic or gene-cloned vaccines are not as effective at stimulating immunity as present-day killed or live vaccines. New adjuvants are needed to increase the immune response.

The use of cowpox or vaccinia to control smallpox has eradicated the disease from the face of the earth. It is one of the most successful vaccines ever used. Cowpox will be used again, only this time, it will be a novel hybrid cowpox vaccine. Using enzymes to snip genes, workers at the National Institutes of Health and the New York State Department of Health have inserted the DNA from some human viruses into the DNA of cowpox. The hybrid retains its cowpox virus infectivity and at the same time evokes an antibody response against the products of the inserted virus. Vesicular stomatitis is the first virus attacking livestock to be inserted into the cowpox virus. This a is highly competitive area of research. Many scientists will attempt to use a hybrid cowpox virus with a variety of other animal viruses.

The cowpox virus is so large that there is enough room to insert maybe a dozen different foreign genes. It might be possible to vaccinate an animal against several viruses with one innoculation.

There is absolutely no doubt that live virus vaccines produce a more durable immunity than killed virus vaccines. But, live virus vaccines can mutate to a more virulent state. Perhaps a better solution would be to take a live virus vaccine and remove those genes that potentially revert the vaccine virus to virulence. It will be a few years before this is accomplished but it remains a possibility.

Monoclonal antibodies are finding a place in prevention of neonatal diarrhea in calves and in the immediate future, diarrhea in young pigs. While there are many causes, the bacterium E. coli plays a role alone or in concert with viruses. The pili of E. coli located on their surface aid in the attachment of the bacteria on to the lining cells of the intestine. The monoclonal antibody blocks the attachment of the E. coli bacteria.

TREATMENT

Recombinant DNA procedures have been used to produce medically important proteins such as interferon and growth hormones. Bovine growth hormone can markedly increase a cow's milk production and cause weight gains. It is likely that growth hormones will be available for swine and sheep

by the end of the 1980's.

The Australians are attempting to clone the gene for epidermal growth factor. If high doses are given to sheep, the factor causes a weakness in the wool and after a few days, the wool is removed by simply brushing the sheep. If the method proves to be practical, it will "save the backs" of the shearers.

A major problem in treating cancer in animals or man is that chemotherapeutic agents or radiation damages normal cells as well as cancer cells. It is like burning down the house to get rid of the termites. Monoclonal antibodies have been prepared that will target cancer cells and not normal cells. The monoclonal antibodies are carried by the blood to the cancer cells and "piggy-back" the treatment component with them. There is an explosion of progress in human medicine that will spill over into veterinary medicine such as the treatment of cancer eye in Herefords and lymphosarcoma in all breeds of cattle.

Because of their highly specific nature, monoclonal antibodies could be employed for treatment of diseases such as rabies, botulism, and tetanus.

GENETIC IMPROVEMENT OF LIVESTOCK

Man has imposed his selection on developing breeds of livestock for thousands of years. Great progress has been made by improving the genetic quality and productivity. Classical breeding trials have served us well. New techniques in biotechnology will allow more rapid progress in the genetic modification of animals.

The sexing of embryos is under intense investigation. There is a protein called the H-Y antigen found on the cells of male embryos but not on those of female embryos. Using monoclonal antibodies, the procedure can distinguish male and female mouse embryos with 80% accuracy. This technical breakthrough is being applied to cattle embryos. It is highly likely that test kits will be available in the near future.

Looking to the future, we will have a sperm sorter to select the sex of the offspring. Some contemporary research utilizes flow cytometry for detection schemes. If we could separate the x-bearing female sperm from the y-bearing male sperm and maintain viability, we could produce female dairy calves and if desired, male beef stock.

There is a basic question as to why some animals get sick and some don't. Geneticists have tried for years to link genetic traits with disease susceptibility without a great deal of success. They have simply lacked the tools to do the job. In human medicine, immunologists have found unique antigens on red and white blood cells that are linked to genes controlling susceptibility to some forms of arthritis and diabetes.

An unanswered question which is significant in relation to disease susceptibility is whether genes that control disease resistance in livestock are linked to blood cell antigens. Monoclonal antibody technology is necessary to sort out the antigens on the surface of blood cells.

Mixtures of antibodies would never allow this differentiation. Research workers are currently investigating bovine lymphocyte antigens in hopes that they will provide markers that can be used to select for disease resistance.

As scientists learn to identify desirable genes, we move closer to the goal of developing disease resistant livestock and livestock that have highly desired production traits. This could be accomplished by micro-injecting cloned DNA that codes for desirable characteristics into newly fertilized eggs. Then if all went well, this genetic blueprint would be passed from generation to generation.

If frog and mouse embryos can be cloned, can we clone the embryos of a cow producing 40,000 pounds of milk a year? Here is a future scenario utilizing nuclear transplantation.

First, the fertilized eggs from a breeding of "run of the mill" cows are collected. By micromanipulation with a pipette the nucleus of each of the fertilized eggs is sucked out and discarded leaving a shell, called the zona pellucida. Then, the nuclei of fertilized eggs from a highly desirable breeding are injected through the shells of the "run of the mill" cows. These "reconstituted embryos" are transplanted into the uterus of surrogate cows. Instead of producing one genetically superior calf from a breeding, we might expect 4 or 8 calves from that

breeding. This may sound simple, but the technology will require the collaborative efforts of molecular biologists, experimental embryologists, veterinarians, and animal scientists before it becomes a practical procedure.

I have talked about many potential applications but very few actual applications of biotechnology. A scientist is always at the mercy of his tools. With gene probes, recombinant DNA, monoclonal antibodies, and micromanipulation of embryos, we are entering an era of spectacular basic research that will have a real impact on our livestock industry.

WEATHER AND CROP PROSPECTS - 1985

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The weather continues to demonstrate its random, anomalous behavior around the world, and crop yields reflect the timing and persistence of anomalous events during the growing season. Two examples highlight how the timing of weather events affects the yield potential from crop emergence to late filling stages. First, a wet, cool spring in the U.S. Corn Belt slowed corn planting, raising fears of declining yield potential due to the late start. The worst case scenario was hot, dry weather during the weather-sensitive tasseling/silking period followed by an early freeze, which could prematurely end the growing season, in the Corn Belt. Ironically, hot, dry weather developed during the summer but after reproduction, and an episode of record cold weather occurred in late September. The hot summer weather accelerated the crop toward maturity in advance of the September frost. While the crop yield potential declined somewhat, corn and soybeans yields were about 30 and 13 percent, respectively, above the 1983 drought-stricken crops (based on November 11 estimates).

A second example was found half way around the world. A three month dry spell across southern and eastern portions of Australia's wheat belt, comprising over 50 percent of the total wheat area, caused extensive planting delays. Wheat is normally planted in May and June but planting can extend into late July. The drought, considered as bad or worse than the 1982 "El Nino" related drought for the three month period of mid-April to mid July, heightened growers apprehension about the truly oscillating nature of Australia's annual weather and crop yield patterns. Suddenly, in mid July, the weather pattern changed and widespread soaking rains moistened soils sufficiently to stimulate wheat seeding across the drought stricken areas. Generally favorable weather continued into November improving yield prospects substantially, although still much below 1983's record performance. Timing of weather events was the key factor most notable in these two areas.

Persistence is another factor which affects the yield potential. In the Canadian Prairie grain belt, spring rains were less than adequate in the south but crop sowings were completed. The dry weather pattern, which really began during the previous autumn, continued into the summer months across the southern portions of Saskatchewan and Alberta. Hot weather during July and August aggravated stress conditions in the south. Yields were cut drastically due to the persistent dry weather. In contrast, persistent wetness during planting and again late in the season across northern portions of the grain belt hurt the quality of grains and oilseeds.

Unfavorable weather continued to plague USSR agricultural areas in 1984. Dry weather covered the spring grain areas of the middle Volga Valley, southern Urals and western Kazakhstan in July and persisted into August. Spring wheat and barley advanced into the heading/flowering stage during a period when hot weather (maximum temperatures in the mid to upper 30's ^{o}C) accompanied the dry conditions. The adverse weather resulted in reduced yield prospects throughout the area.

Thus, while climate is the dominant factor in determining the suitability of a crop for a given area, the effectiveness of weather variables in annual crop yields is highly dependent upon the occurrence and duration of anomalous conditions as related to the stage of crop development. Figure 1 briefly summarizes the current status of agricultural weather conditions as of November 19, 1984.

National Situation

United States: A cool wet spring slowed land preparation and crop planting through the Corn Belt and the South. Pockets of dryness existed over the southern Great Plains and Montana. As the summer growing season progressed, abnormal dryness expanded over many agricultural areas, east of the Rockies. Unfavorable dry weather prevailed from the northern Great Plains into the Canadian Prairie grain belt throughout the growing season. While the Canadian spring wheat yields suffered from the persistent dryness, relatively cool weather in the Corn Belt kept the stress potential relatively low until early August. Thus, corn advanced through reproduction in mostly good, but slowly deteriorating, condition in July. Hot weather during August advanced corn maturity, delayed early winter wheat seeding and stressed soybeans from the central Great Plains to the Corn Belt. Soybean's deteriorating conditions in the Corn Belt were offset, however, by beneficial showers in the Delta and the Southeast. By early September row crops suffered from increasing moisture stress in the Corn Belt and the Great Plains. Above normal precipitation covered most of the Nation in October with very heavy rain falling from southeastern Texas to the lower Ohio Valley. Downpours in the upper Mississippi Delta damaged some cotton and soybeans. Freezing temperatures ended the growing season from Nebraska through the western Corn Belt about one week ahead of the normal date. Summer crop harvests were substantially delayed in the east. Drier weather in early November improved harvest conditions but as of November 11, progress compared with last year and the average, respectively, were as follows: corn 79%, 94%, 83%; soybean 67%, 83%, 85%; sorghum 83%, 89%, 88%; and, cotton 45%, 61%, 59%. Overall production prospects for grains and soybeans are much better than last year but below the 1982 record-setting levels.

Rain in the central and southern Great Plains benefited winter grain planting and early growth in the hard red winter wheat areas, but the persistent wetness in soft red winter wheat areas of the Corn Belt hampered seeding. Significant delays were most notable, compared with last year and on average, in Illinois (60%, 97%, 97%), Indiana (80%, 99%, 97%), and Missouri (61%, 87%, 86%) as of November 11, 1984. The only dry pockets during October were portions of the northern Great Plains, where winter wheat planting was completed, and, in the Southeast where wheat planting was delayed due to insufficient moisture. Early November rains stimulated

planting in the Southeast, however. The abnormally cold October weather in the northern Great Plains stopped the progress of wheat emergence at 65% of the planted crop in Montana.

The long-term Palmer Drought Index, as of October 27, 1984 shows a substantial difference from that of the previous October (1983). Last year, a large area of limited moisture extended from the southern Great Plains across the Corn Belt to the Atlantic Coast from New England to Florida. This year, October's rainfall has substantially replenished soil moisture supplies, leaving only scattered areas with limited moisture. Most notable are Montana, where cold weather has already restricted autumn growth, western Oklahoma and eastern Kansas, and portions of the Southeast where recent showers have improved topsoil moisture supplies.

Presently, relatively dry weather is needed to finish summer crop harvesting and winter wheat planting in the Corn Belt. The crop is emerging in mostly good condition, offering an early optimistic outlook. The late planting schedule in the eastern Corn Belt makes the crop in that area more vulnerable to a severe cold outbreak in its emerging phase. Limited moisture reserves in the Southeast and Montana makes timely winter and spring precipitation an essential factor in the yield potential. The autumn rains in the central Great Plains, the Corn Belt and the Delta will provide subsoil moisture supplies for the start of next year's summer growing season.

International Situation

USSR: Unfavorable weather conditions reduced 1983/84 crop yields for the sixth consecutive year, causing total Soviet grain production to fall well below anticipated levels. Last winter was generally mild and dry over the winter grain area, limiting soil moisture recharge in eastern winter grain areas (Black Soils, eastern Ukraine, North Caucasus, and Volga Valley). A blocking high pressure system became established over the Volga Valley during the first week of May and persisted into early June. Hot, dry weather in east European USSR accelerated winter grain growth and reduced yield prospects. In contrast, heavy precipitation over west European USSR during the same time period lodged crops and adversely affected grain quality. During the remainder of the summer growing season, unfavorably low moisture conditions and spells of hot weather in parts of the southeast (eastern Ukraine, northern Caucasus, eastern Black Soils, and middle Volga Valley) reduced yield prospects for corn, sunflowers, and spring barley. In the New Lands, moisture conditions for 1984 spring wheat planting were mostly favorable. In early July, however, the weather became unseasonably hot and dry in southwestern crop areas (southern Urals and western Kazakhstan), which, historically, account for about 40 percent of total spring wheat production and are also important barley producing areas. Spring wheat was in the critical heading and flowering stages, and yield prospects were reduced. Harvest conditions over Soviet grain areas were mixed. Parts of west European USSR, the Volga Vyatsk and the northern Urals experienced the greatest harvest delays due to persistent wet weather.

Regarding the newly planted 1985 crop, winter grains from the Baltic States eastward through the Central Region, and into the northern Volga Valley had favorable moisture conditions for plant establishment. Across

periods. In the southern wheat region, heavy August rains provided abundant moisture for summer crops. However, very dry weather in Madhya Pradesh since August has left topsoils unfavorably dry for wheat planting and establishment. Above-normal October rain in Maharashtra improved planting conditions following less than normal seasonal rainfall accumulations.

China: Summer rainfall was near to above normal in much of the North China Plain, benefiting cotton, corn and soybeans. September rainfall was also above normal in much of the region, hampering summer crop harvesting but providing preplanting topsoil moisture for winter wheat. Last season, heavy rain continued into October causing planting delays in some wheat areas. During October 1984 mostly dry weather allowed winter wheat planting to continue at a normal pace. Persistent dryness in Hebei is unfavorable for wheat planting and establishment in nonirrigated areas. Above-normal October temperatures in most of the wheat region aided crop establishment. In November, timely rain covered the southern three-fourths of the emerging winter wheat crop. Winter wheat normally enters dormancy about mid-November in the north and mid-December in the south. Winters tend to be very dry in the North China Plain. When the crop breaks dormancy in the spring, precipitation and/or irrigation will be needed for crop development.

South Africa: Droughts have plagued the Maize Triangle during the past two seasons. Corn production was severely reduced to only 50 percent of early-season projections during both years. Last year appeared promising, as the wet season began on time in October. Rain continued through December favoring planting and early growth. Dry, hot weather intensified in January and February during the moisture critical reproductive and grain filling periods. Crop conditions deteriorated rapidly. This season, above-normal October rain covered most of the Maize Triangle. The major producers, West Transvaal and Northwest Orange Free State, normally accumulate only marginally enough rain to support a corn crop. Therefore, despite the favorable early conditions, near-to above-normal rain will be needed throughout the growing season.

Brazil: Unfavorable weather plagued Brazil's wheat crop. A three month dry spell and a frost episode hurt prospects in Parana while persistent wetness promoted weed growth in southern wheat areas. Soybean planting begins in late October and extends into mid-December. Early season planting delays have been experienced in the soybean belt due to weather extremes. In the north, soybean areas of northern Parana, Sao Paulo and Minas Gerais remained dry until early November. Unusually hot weather also prevailed over the dry areas depleting any soil moisture reserves. Recent showers have improved conditions, allowing some planting which had lagged behind schedule. In contrast, rainy weather over the major soybean producing state of Rio Grande do Sul has hampered fieldwork, slowing early planting progress. To summarize, abundant moisture is available in the south for early crop establishment with the peak planting period underway. Limited moisture is available for crop establishment in northern crop areas; thus, the crop is more vulnerable to prolonged periods (more than 10 to 15 days) of dry weather during key growth stages. Periods of hot, dry weather from December through February have occurred during four of the past eight years, leading to below-trend soybean yields. Beyond the period of crop germination, flowering through pod-filling are the critical weather-sensitive growth phases.

major winter wheat areas of the south, planting rains were timely and more evenly distributed than those in 1983.

Figure 2 depicts a plot of cumulative precipitation (observed and normal), representing a regional average of several stations in the North Caucasus from mid-August through mid-November, for both 1983 and 1984. Wet weather over the North Caucasus in late August, 1984 increased topsoil moisture for wheat, normally planted in September. Timely followup rains by mid-October, 1984 favored emergence and boosted early crop growth. This pattern is typical for the entire winter wheat area during the 1984 planting season. However, favorable overwintering conditions and significant spring rains will be needed to ensure improved yield prospects for the winter grain crop in 1985.

October's temperatures averaged several degrees above normal. Then in mid-November, bitter cold air pushed southward into Soviet winter wheat areas. Nighttime lows of around -10°C were reported as far south as the southern Ukraine and northern North Caucasus, where October's warm weather slowed cold hardening of winter grains. The cold weather stopped wheat growth over all crop areas, forcing winter wheat in the south into dormancy with minimal hardening, similar to last year. Thus, overwintering and spring growing conditions must be watched.

Australia: The weather continues to play the dominant role in wheat yield variability. The 1982/83 wheat crop was devastated by prolonged, severe drought conditions in eastern and southern areas. The 1983/84 crop benefited from frequent, timely rains resulting in record wheat production. Prospects for the 1984/85 crop were lowered during the planting season as a three-month drought returned to eastern and southern wheat areas. Planting can be delayed until late July when growers must make alternate decisions due to climatic and agronomic factors. As the deadline approached in mid-July, widespread soaking rains alleviated drought conditions, stimulating substantial late-season planting activity. The decision to plant was correct as timely rains fell throughout the wheat belt in August and September. Drier weather in October tempered the improved prospects somewhat, especially for the late-sown crop, but recent showers have maintained favorable yield prospects across the wheat belt. During the past twenty years, the percentage of years when dry weather during the growing season has substantially reduced wheat yield prospects is 30 percent. Based on these statistics, which do not show any strong cyclical pattern, unfavorable yield prospects can be expected about one in every three years.

India: Two thirds of the wheat crop is produced in the major grain belt from Punjab through Bihar. The remaining wheat region extends southward into Rajasthan, Madhya Pradesh, Gujarat, and Maharashtra. Most of the crop is planted during October and November but planting can continue through December in the northwest. Monsoon rains during August and September were near normal in much of the major wheat belt. Parts of Uttar Pradesh and Bihar received below normal monsoon rain but much of the Ganges Plain is irrigated. The northern wheat belt generally has adequate moisture for planting and early growth. November and December are normally the driest months in northern India. Precipitation usually increases slightly in January and February coinciding with the heading and filling

Argentina: Prolonged dryness during the wheat planting season over northern Buenos Aires, Santa Fe and Cordoba delayed sowing and hampered crop establishment. The situation was similar to that during Australia's wheat planting season, and similar late rains fell in sufficient time to stimulate sowing and emergence. Frequent rains during the growing season have maintained generally adequate moisture for winter wheat advancing through grain filling. The summer growing season has begun but wetness has slowed planting of cotton and sorghum in the northeast, and corn, sorghum, sunflowers and soybeans in the major summer crop areas of Buenos Aires and surrounding provinces. Ample moisture is available to establish the summer crops. Temperature and precipitation patterns during December, January and February play a key role in the final yield outcome for corn, sorghum and other summer crops. Most notable were five crop years, 1971/72, 1975/76, 1979/80, 1981/82 and 1982/83, when episodes of hot and dry or cold and wet weather during the growing season were attributable to declines in crop yield potential. The timing of such episodes during weather sensitive stages of crop development is especially important. Given more favorable planting conditions for summer crops, current moisture supplies will provide a favorable start for the upcoming crop season.

FIGURE 1

WORLD AGRICULTURAL WEATHER HIGHLIGHTS

Date November 1984

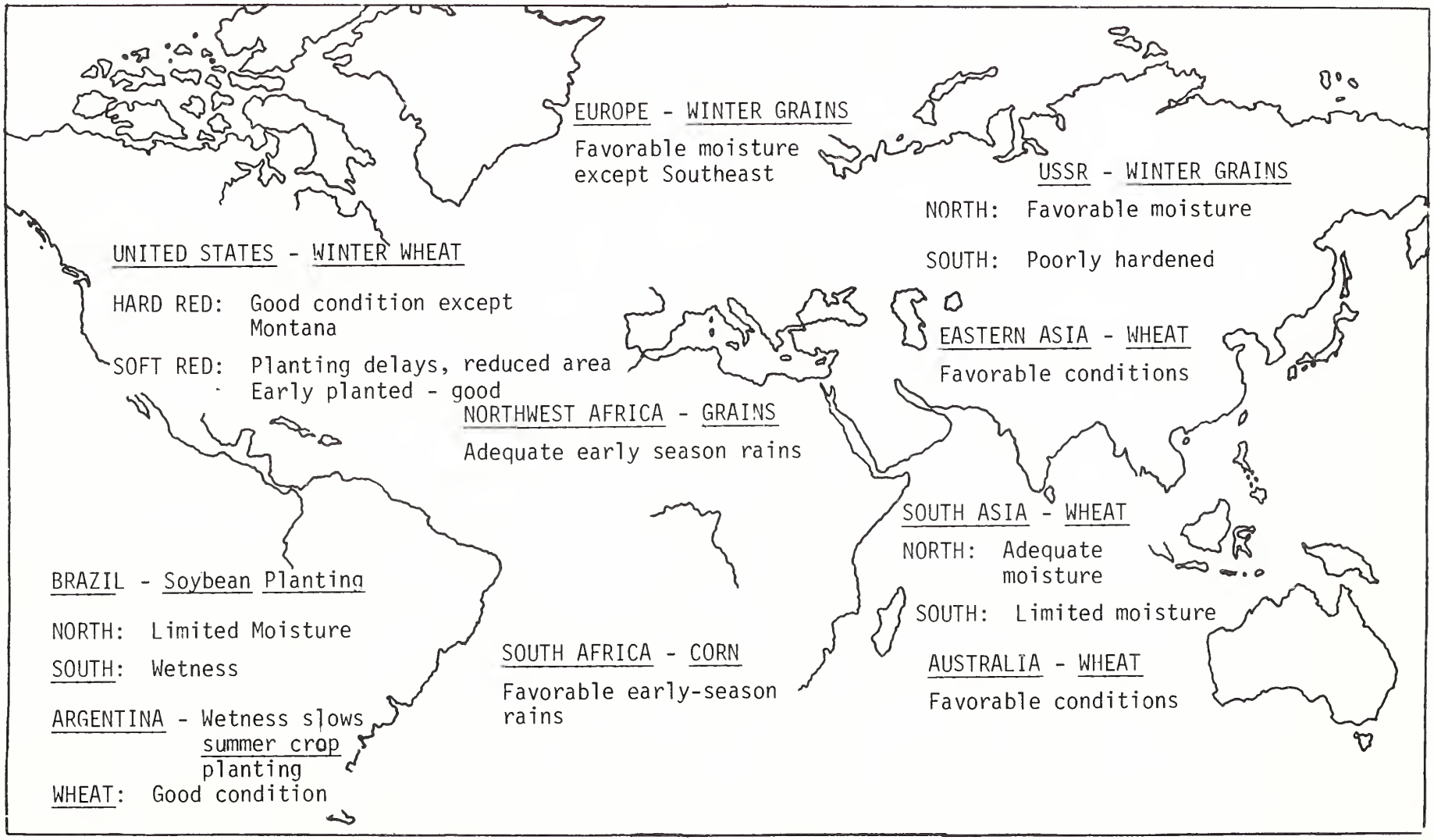
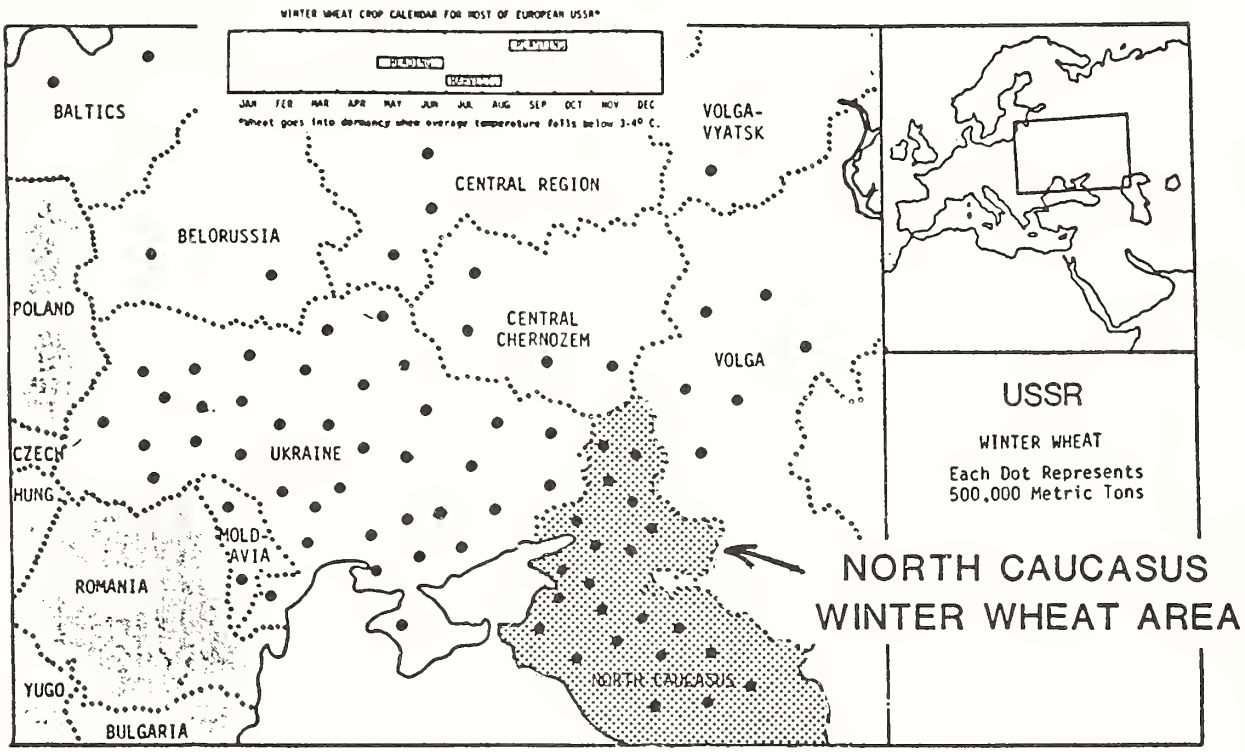
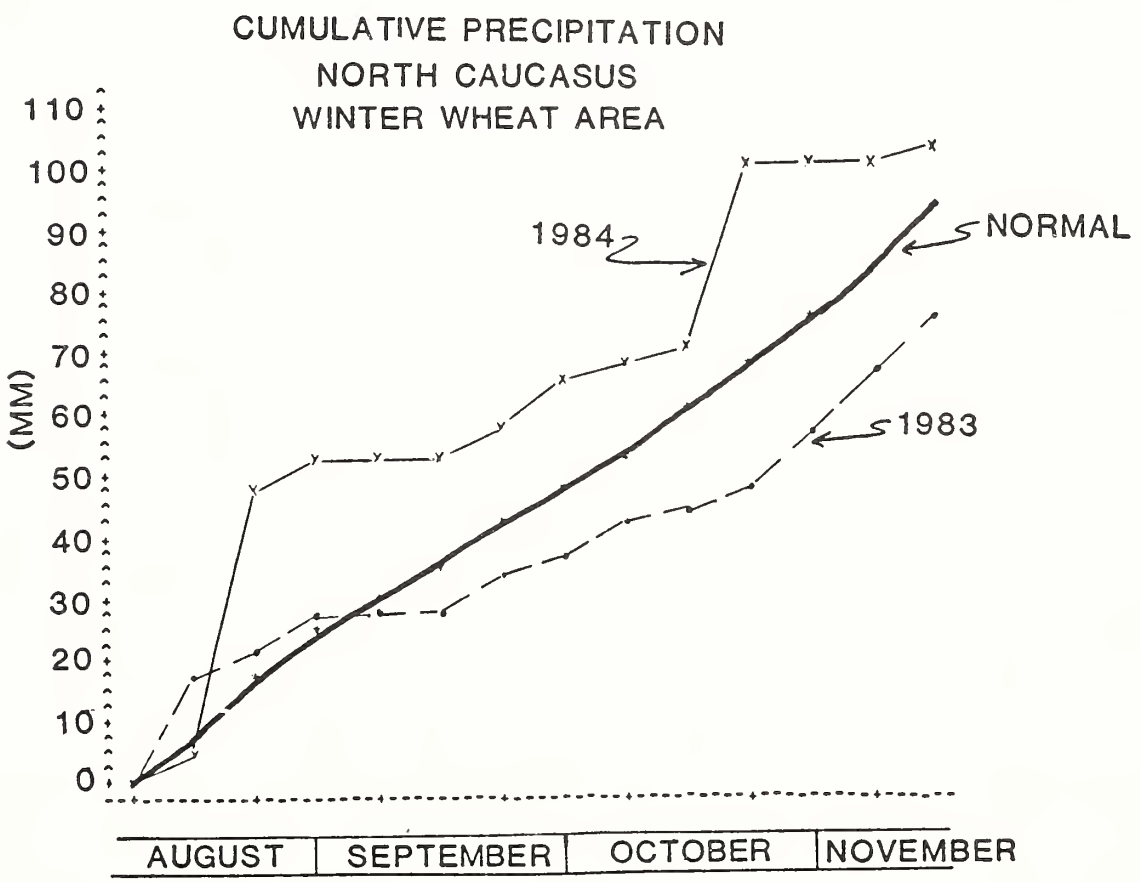


FIGURE 2


WINTER WHEAT CROP CALENDAR FOR MOST OF EUROPEAN USSR*
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
*Wheat goes into dormancy when average temperature falls below 3-4° C.
BALTICS
VOLGA-VYATSK
CENTRAL REGION
BELORUSSIA
POLAND
CENTRAL CHERNOZEM
VOLGA
CZECH
HUNG
UKRAINE
MOLD-AVIA
ROMANIA
YUGO
BULGARIA
NORTH CAUCASUS
USSR
WINTER WHEAT
Each Dot Represents 500,000 Metric Tons
NORTH CAUCASUS WINTER WHEAT AREA


CUMULATIVE PRECIPITATION
NORTH CAUCASUS
WINTER WHEAT AREA
110
100
90
80
70
60
50
40
30
20
10
0
(MM)
1984
NORMAL
1983
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER

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Forest Service, USDA
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Few timber products are consumed by individuals in the form in which they are initially manufactured. Instead, most move to various major markets where they are remanufactured or made a part of a product that is ultimately used by individual consumers. Thus, although consumer demand is the underlying force, direct demand for timber products is largely determined by the levels of activity in their primary end-use markets. So before discussing demands for the various products, I will briefly review recent trends in these markets and take a look at current estimates of their strength for this year and early in 1985.

General Economic and Major Domestic Market Trends

Activity in the major timber products markets in the United States, up fairly sharply from 1983 levels early in 1984, continued moderately strong through the first half of the year. However, in the third and early in the fourth quarters, trends in most of the major economic indicators, including a sharp deceleration in overall economic growth, suggest that demand in many markets is slowing late in the year and will likely continue somewhat lower in early 1985.

Overall United States economic activity, as measured by the gross national product, rose 6.3 percent at a seasonally adjusted annual rate through the first 3 quarters of 1984 reaching $1,646 billion (1972 dollars). Although this was very near the increase registered in the first three quarters of 1983, GNP growth has been moderating since early in the year. Estimates by the U.S. Department of Commerce late in November put third-quarter growth at an annual rate of 1.9 percent, only a little over a fourth the second quarter rate, and less than a fifth as large as first quarter growth. Most available indicators point to continued slower rates of growth in the last months of the year and early in 1985. As a consequence, 1984 GNP should average about $1,638 billion (1972 dollars), 6.7 percent above the average for 1983. For all of 1985, most analysts expect a growth rate about half as large. This would mean a further increase to about $1,695 billion.

Trends in new construction, the most important domestic wood products market, vary with the type of construction. New housing units, which typically account for more than 40 percent of United States consumption of lumber and plywood and for substantial volumes of other timber products, were started at an annual rate of nearly 2.0 million units through the first four months of 1984. Since April, however, the number of units started, though characterized by sharp month-to-month fluctuations, has shown an overall downward trend. In

October starts dropped almost 10 percent to a seasonally adjusted annual rate of 1,515,000 units. The October rate was about 9 percent below the year-earlier rate and represented the lowest level of new housing activity since December 1982. Despite the October decline, the seasonally adjusted annual rate for the first 10 months of 1984 was 1,809,000, about 4.5 percent above the rate for the similar period in 1983.

Housing industry observers have not been surprized by the declines in housing activity, since it was widely felt that the start levels reached early in the year could not be sustained because of persistently high mortgage interest rates. Most analysts now expect starts to continue at about the October rate in the last weeks of 1984 and in early 1985. Their estimates are based on the expectation that interest rates--currently down somewhat from those in effect at mid-year--will not turn up appreciably in the near term. With these various factors in mind, recent estimates of housing starts for 1984 range from 1,720,000 to 1,780,000 units with the current consensus at about 1,750,000, a little more than 2 percent above the 1,712,000 total started in 1983. At that level, 1984 will be the best year for housing since 1979.

Most economists currently feel that new home construction and sales will likely continue to be constrained by interest rates in 1985, particularly in the second half, and that the total number of units started during the year will drop to the 1,500,000 to 1,550,000 level. Mobile home shipments for 1984 and in 1985 are expected to follow the same general trends shown by housing starts.

Through the first 10 months of 1984, single-family units composed about 61.4 percent of all private starts (seasonally adjusted annual rate basis), somewhat below the 63-percent share recorded in 1983. A decline in the proportion of single-family units has special significance for the timber products industries because average use per unit of most wood products is much higher in those units than in multifamily units and mobile homes.

In contrast to housing, nonresidential construction activity has been growing fairly rapidly in 1984. The seasonally adjusted annual rate of expenditures for new nonresidential construction in September reached $118.3 billion (1977 dollars), more than 18 percent above the the total for all of 1983. Much of the rise has been in expenditures for nonresidential building construction--the major wood-using segment of the nonresidential market.

A number of factors, including a slowing in consumer spending late in the fall, the smaller growth in overall economic activity in the third quarter, and continuing high interest rates, are apparently causing a downward revision in capital investment plans for some industries. According to the latest U.S. Department of Commerce survey of anticipated expenditures for new plant and equipment. In addition, contracts for future new construction were down (seasonally adjusted basis) in the fall. Unless last quarter construction spending is particularly weak, however, total expenditures for all of 1984 will be significantly above the total for 1983. Nonresidential construction activity is likely to continue at a somewhat slower pace in 1985 than was shown in 1984.

The index of industrial production--an important indicator of the demand for pallet lumber, container board, and some grades of paper--rose to a seasonally adjusted value of 166.1 (1967=100) in August. This represented a 6.3 percent rise since January and was the twenty-second consecutive monthly increase since the low reached in November 1982. In September, however, in response to slowing economic growth, industrial output dropped to 165.2 and continued at that level in October. Output of the furniture and fixtures industries--a major market for hardwood lumber, particleboard, medium density fiberboard, and plywood--followed the same general trend, rising almost 10 percent through August but declining in September. Production of nondurable containers, an important paperboard market, has been slowly falling since June.

Many economists feel that production in most industries over the next few months will continue at a somewhat slower pace than in the first three quarters of 1984, because of the expected slower growth in the overall economy. Most also expect somewhat higher levels of industrial output in the second half of 1985 than in the first two quarters of the year.

In summation, trends in the domestic markets for most timber products have kept consumption and production at higher levels in 1984 than in 1983. However, slower growth in the last weeks of this year and in 1985 is likely.

International Markets

The United States is the world's leading importer of timber products--chiefly lumber, wood pulp, and paper and board from Canada and veneer and plywood from southeast Asia. The total value of these imports in 1983 was $10.1 billion, about 3.9 percent of the value of all U.S. imports. In terms of roundwood equilivent (ie., the estimated amount of wood required to produce the individual products), more than a fifth of our apparent consumption of timber products has been imported in recent years.

The United States is also a major timber products exporter. In 1983, the total value of timber products exports was $7.0 billion--about 3.6 percent of our export total. Although we ship a variety of wood products to many countries, our principal export markets are Japan for softwood logs and lumber, pulp chips, wood pulp, and paper and board products, and western Europe for lumber, plywood, wood pulp, and paper and board.

According to data presented at the October meeting of the Timber Committee of the Economic Commission for Europe, economic growth in most of our major international markets in 1984 has proceeded at a relatively slow pace. Although official forecasts for western Europe, have been revised slightly upwards during the course of the year, the recovery has remained weaker than in the U.S. In addition, the European recovery has not included a revival in new housing construction to the levels that many observers expected. Much the same sort of housing construction trends have been underway in Japan.

The outlook for international trade appears somewhat improved for most products in 1985, however exports to many countries will likely be only marginally above 1984. The present strength of the U.S. dollar against other currences is likely to be maintained, at least in the short run, bringing with it improved export possibilities for our major world trade competitors, but continuing to contribute to a weakened position for U.S. timber products exporters.

Timber Products Production, Trade, and Consumption

Softwood Lumber

In response to the increased activity in its major markets, including the higher levels of housing starts, softwood lumber production in the first three quarters of 1984 was about 8 percent above that of the same period in 1983 according to data from the Western Wood Products Association. However, currently available information on trends in production and on housing and other markets indicate the likelihood of some slowing of output in the final quarter of the year. Consequently, production for all of 1984 is estimated at about 27.3 billion board feet, 5 percent above the 26.0 billion board feet produced in 1983 (table 1).

Imports, chiefly from Canada, are also expected to slow somewhat late in the year, but overall to be up about 7 percent to a record 12.8 billion board feet in 1984. Exports are likely to decline about 10 percent to 1.6 billion board feet.

Based on these estimates of production, imports, and exports, apparent consumption (ie., production plus imports minus exports) in 1984 is estimated at 38.5 billion board feet--about 6 percent above 1983 and the largest volume consumed in U.S. domestic markets since 1979.

These estimates of production and consumption, based on data compiled by the U.S. Department of Commerce, Bureau of the Census, may be 8 to 10 percent below the actual volumes produced and consumed. The Southern Forest Products Association estimates that production of southern pine lumber may have been much larger than reported by Census over the past few years. The Bureau of the Census concurs that their published production data are probably low and they are currently working to update their list of sawmills in order to rectify the problem.

Present expectations about housing and other important markets indicate that a decline in production, imports, and consumption is likely in 1985. Exports are likely to show a small rise.

On the strength of rising demand, softwood lumber prices increased rapidly early in 1984, however at the end of the first quarter prices peaked and have been declining over the past 7 months. The producer price index of softwood lumber in October stood at an index level of 333.9 (1967 = 100) (table 2).

Table 1.--Wood products production, consumption, and trade

(1981-83 actual, 1984 projections)

Product	Year	Domestic Production	Imports	Exports	Apparent Consumption
Softwood lumber (billion bd. ft.)	1981	22.7	9.2	1.9	30.0
	1982	20.8	9.1	1.6	28.3
	1983	26.0	12.0	1.8	36.2
	1984	27.3	12.8	1.6	38.5
Hardwood lumber (billion bd. ft.)	1981	6.2	.3	.5	6.0
	1982	5.0	.2	.4	4.8
	1983	6.1	.3	.5	5.9
	1984	6.7	.4	.6	6.5
Softwood plywood (billion sq. ft., 3/8-inch basis)	1981	15.5	1/	.7	14.9
	1982	15.1	1/	.5	14.7
	1983	18.3	.1	.6	17.8
	1984	19.5	1/	.4	19.2
Hardwood plywood (billion sq. ft., 3/8-inch basis)	1981	1.0	1.5	1/	2.4
	1982	.9	1.1	1/	2.0
	1983	1.0	1.6	1/	2.6
	1984	1.1	1.7	1/	2.8
Particleboard 2/ (billion sq. ft., 3/4-inch basis)	1981	3.5	.3	.1	3.6
	1982	2.9	.3	.1	3.1
	1983	3.7	.4	.1	4.0
	1984	4.0	.5	.1	4.4
Hardboard (million tons)	1981	1.9	.2	3/	2.0
	1982	1.7	.2	3/	1.8
	1983	2.1	.2	.1	2.2
	1984	2.1	.3	.1	2.3
Insulation board (million tons)	1981	.8	3/	3/	.8
	1982	.6	3/	3/	.7
	1983	.8	.1	3/	.8
	1984	1.1	.1	3/	1.2
Pulpwood (million cords)	1981	85.2	1.5	3.0	83.8
	1982	79.7	1.4	2.4	78.8
	1983	87.1	1.7	2.0	86.8
	1984	89.7	2.0	1.9	89.8

1/ Less than 50 million square feet.
2/ Includes medium-density fiberboard.
3/ Less than 50 thousand tons.

Note: The projections shown for 1984 are based on the trends in the major markets discussed in this paper and should not be viewed as forecasts of actual volumes. Data presented are subject to rounding.

Table 2.--Producer price indexes for selected wood products

(1967 = 100)

Product	1981 annual	1982 annual	1983 annual	October 1983	October 1984
Softwood lumber	343.0	321.6	369.8	355.1	333.9
Hardwood lumber	255.2	262.4	283.7	296.3	319.4
Softwood plywood	306.5	282.1	310.4	309.1	309.5
Hardwood plywood	179.7	181.0	179.8	182.7	175.6
Particleboard 1/	2/	2/	106.3	107.9	115.4
Hardboard 3/	217.9	228.5	234.4	234.7	231.3
Insulation board	242.4	250.9	262.7	272.7	271.1

1/ Platen-type. December 1982 = 100.
2/ Not available.
3/ Type II, 1/8-inch.
Source: U.S. Dept. of Labor, Bureau of Labor Statistics.

This was about 13 percent below the high for the year reached in March, and 10 percent under the average for all of 1983. In mid-November, prices for some grades and species appeared to have stabilized, however no appreciable rise is likely if housing construction continues at relatively lower levels in the last weeks of the year and early in 1985.

Hardwood Lumber

Because of the increased activity in its major markets, hardwood lumber production, orders, and shipments during the first three quarters of 1984 were above 1983 levels during the same period. Output for the year, based on the probability that there will be some slowing in the last few weeks, is estimated at 6.7 billion board feet--10 percent larger than production in 1983.

Hardwood lumber imports through September were strongly above those in the first 9 months of 1983, however some moderation is likely in the last quarter. The total for the year is thus estimated at 0.4 billion board feet,

up about 0.1 billion board feet. Data through September show that exports were 11 percent higher than in the first 9 months of 1983. The total for the year is expected to be 0.6 billion board feet, also about 0.1 billion board feet above the volume exported in 1983.

Apparent hardwood lumber consumption in 1984, based on the above estimates of production and trade, is estimated at 6.5 billion board feet, 10 percent above 1983. Anticipated growth in the important hardwood markets suggests some additional, though small, increase in production and consumption is likely in 1985. Imports and exports are also expected to show a small rise.

In contrast to softwoods, hardwood lumber prices, as measured by the producer price index, trended steadily upwards through midsummer, before showing a decline in the early fall. Prices in October (index value 319.4, (1967=100)) were about 3 percent below the July high, but remained almost 13 percent above the average for 1983. Prices for hardwood lumber can be expected to be relatively more stable than those for softwoods because of their market structure.

Softwood Plywood

According to data from the American Plywood Association, production through the first three quarters of 1984 was about 7 percent above the similar period in 1983. Although the Association expects some slowing during the last quarter, output will likely remain fairly strong. As a result of these trends, softwood plywood production for the entire year is estimated at 19.5 billion square feet, 3/8-inch basis, 6.5 percent above 1983 output.

Softwood plywood exports are expected to decline from 0.6 billion square feet in 1983 to a total of about 0.4 billion in 1984. Imports will likely show a small rise to 0.1 billion square feet.

With these levels of production and trade, apparent softwood plywood consumption is expected to total about 19.2 billion square feet in 1984, 8 percent above apparent consumption in 1983. The prospective increases in the nonresidential construction and industrial markets should partially offset the declines in housing use; however, overall production and consumption are likely to be lower in 1985.

Softwood plywood prices, though declining somewhat in the late spring, have returned to very near the levels early in the year and in 1983. The October index was 309.5 (1967=100), less than one percent above the January 1984 and October 1983 indexes, and also very near the average for 1983. Softwood plywood prices will continue to be responsive to housing construction, its most important market.

Hardwood Plywood

The output of hardwood plywood in 1984 is expected to be about 1.1 billion square feet, 3/8-inch basis, only slightly above the 1.0 billion square feet produced in 1983. Trade data through the third quarter of the year indicate that imports are likely to total 1.7 billion square feet, about 5 percent more than in 1983. Exports are expected to remain relatively small.

Given these trends in production and trade, apparent consumption of hardwood plywood in 1984 is estimated at 2.8 billion square feet, about 7 percent above 1983. A small decline in consumption, production, and imports is likely in 1985 if the important markets, particularly residential construction, follow the trends discussed earlier.

The hardwood plywood price index, which remained relatively steady through the first 7 months of 1984, dropped to 175.6 (1967=100) in October. This represented a decline of about 4 percent from the October 1983 level and was about 2 percent under the average for 1983.

Particleboard

Activity in their major markets indicates that combined production of particleboard and medium density fiberboard will be up about 9 percent in 1984 to 4.0 billion square feet, 3/4-inch basis. Roughly a fifth of total combined production is expected to be medium density fiberboard. Data for the first 9 months of 1984 indicate that imports are likely to be 0.5 billion square feet. Exports are estimated at 0.1 billion board feet. Given these estimates, apparent consumption should amount to 4.4 billion square feet, 11 percent more than in 1983. Declines in production and consumption are probable in 1985.

Hardboard and Insulation Board

Hardboard production in 1984 is estimated at 2.1 million tons, about the same as was produced in 1983. Imports are expected to total 0.3 million tons with exports at about 0.1 million short tons. Apparent consumption, with these estimates of production and trade, would amount to 2.3 million tons, about 4.5 percent above 1983.

Markets during the first three quarters of 1984 indicate that insulation board production for the year will be near 1.1 million tons--about 40 percent more than in 1983. Imports are expected to total close to 0.1 million tons and exports to be less than half as large. Consequently, apparent consumption is estimated at 1.2 million tons, almost 45 percent larger than in 1983.

Pulpwood

Through September, paper and paperboard production and consequently woodpulp consumption and production were strongly above year-earlier rates and near industry capacity levels. If overall economic activity continues slower in

the last weeks of the year as discussed earlier, somewhat smaller growth in demand is likely. On the basis of these trends, pulpwood production (roundwood and chips) is expected to rise about 3 percent to 89.7 million cords in 1984.

Imports of pulpwood are expected to total 2.0 million cords and exports approximately 1.9 million cords. These volumes are, respectively, 18 percent above and 7 percent below 1983 imports and exports. Most of the change in both imports and exports is likely to be for pulpwood chips, because of the large percentage of total pulpwood trade that they represent.

Apparent pulpwood consumption in 1984 is expected to increase to about 89.8 million cords, 3.5 percent more than in 1983, and a record high in a trend that has been rising fairly steadily for decades. Prospective increases in economic activity suggest that the upward trend will continue in 1985, though at a somewhat slower pace than in 1984.

Softwood Log Trade

Softwood log exports during the first 9 months of 1984 were up about 3 percent from the total attained in the same period in 1983, as declines in shipments to Japan and Korea were more than offset by increases in shipments to the People's Republic of China, Canada, and several European countries. Reports indicate that a small overall increase is possible during the remainder of 1984, but that volumes will show no strong upward trend. Therefore, exports for the year have been estimated at 3.3 billion board feet, 3 percent above shipments in 1983. The outlook for 1985 is also for a small rise.

Imports of softwood logs, nearly all from Canada, have increased but remain relatively small. They are expected to total about 0.1 billion board feet in both 1984 and 1985.

Hardwood Log Trade

Hardwood log exports for 1984 are estimated at 0.1 billion board feet. Although the volume is small, most of the hardwood logs exported in 1984 and in recent years have been composed of high quality oak, walnut, and other preferred species that are in short supply in the United States. Thus, these exports have been an important contributing factor to the large increases in stumpage prices for some domestic species.

Hardwood log imports in 1984 are expected to be close to 30 million board feet, about a fifth more than the volume imported in 1983.

Industrial Roundwood Summary

Given the trends in consumption, trade, and production for the various products in 1984 discussed earlier, U.S. total production and consumption of all industrial roundwood products (ie., all roundwood products except

fuelwood) is expected to be above 1983 levels. Total imports, including the pulpwood equivalent of pulp, paper, and board will also be up. Total exports will probably show little change. Some decline in total consumption and imports is likely in 1985, while total production remains about the same and exports show a small rise.

Fuelwood

Current estimates indicate that fuelwood consumed for domestic heating and cooking has risen to more than 47 million cords. Various surveys of the forest products industries indicate that there also have been large increases in the consumption of fuelwood for industrial heat and power generation in the last few years. Apparently much of the wood being used for domestic purposes is produced by the consumers from trees in urban areas, fence rows, dead forest trees, and other similar sources not normally drawn upon for industrial timber. Most of the growth in use by the forest industries has come from increased utilization of logging and mill residues.

Because most of the increase in fuelwood consumption has come from such sources, presumably there has been little significant impact on the prices for industrial products such as pulpwood. Moreover, the rapid growth seen during the mid- and late 1970's has apparently slowed. However, in the longer term, if fuelwood use continues to grow, it will undoubtedly begin to affect the supplies and prices of other products and especially so in the future when demands for many products are expected to increase in response to rising population and economic growth.

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Investment Opportunities in Forestry: Growing Pine Timber in the South

Is forestry profitable? Serious investors are asking that question more frequently these days. They are discovering that tree growing sometimes pays quite well and sometimes not. Certainly, enough good opportunities for profitable timber production exist to justify a closer look.

Institutional investors, small private syndicates, and individuals want to know if they can make money growing trees and how. They are considering managing forests for profit as one alternative to more traditional investments. They are finding that timber production on good land in strong markets offers advantages not found in very many other investments.

This interest in forestry for profit is a change. Never before has timber production held the interest of investors. In bygone days, trees grew too slowly for money managers interested in fast payouts. They didn't know much about timber and were afraid of the risks created by fire, insects, and diseases. The markets in many areas were viewed as dominated by industry giants who controlled large timber supplies. With forests covering large areas of many states, few individuals realized that some timber species may be scarce. In brief, most serious investors never recognized forestry as a good way to turn a profit. Some of them are learning now that money can grow on trees -- if, I should add, everything is done right.

One reason forestry was so long overlooked was a lack of information. Timber lacks a published track record. You can't look into the Wall Street Journal each morning to see how trees did yesterday. There are few published accounts of how well investors who were growing timber 30 years ago made out. Until just recently, it was even difficult to know how much standing timber was worth in the marketplace.

Now, much more information is available for timber investors. A private price reporting service gives typical timber prices in over 30 substate regions of the South each month. Several major studies of investment opportunities have increased the recognition of timber investment possibilities. Microcomputer models can now estimate expected profits from timber management in minutes

instead of hours. And more definitive projections of future regional timber supply and demand are being released. This information helps investors judge whether timber is right for them.

Forest management offers advantages over traditional investments that appeal to some investors. Today, I would like to offer some of my views about growing pine timber in the South.

The profitability of forestry stems from the basic productivity of land. The highest returns are usually found where trees grow the fastest, where markets are strong, and where the costs of growing trees are modest. While most financial gains come from selling timber, managed forests produce wildlife, recreation, water, and some pleasing scenery too. Once established, managed forests continue to grow steadily year in and year out. They pay little heed to Wall Street, the national debt, or the rate of inflation. The economic climate, however, does affect the demand for and value of wood products coming from forests.

As trees grow in size, their value per unit of volume also grows significantly. Larger trees are worth more. In some areas of the South, one cubic foot of wood from a 15-inch sawtimber tree can be worth as much as six cubic feet from 7-inch pulpwood trees. It does take longer to grow big trees than smaller ones, but the increase in value often makes the wait worthwhile.

There are some tax advantages to timber growing investments. Woodlands provide no extraordinary tax shelters, but, timber production does enjoy favorable income tax treatment. Timber takes a long time to produce and revenues from timber sales are taxable at favorable capital gains rates. For investors in the top tax bracket, this is a significant advantage. Costs of selling timber can be deducted before figuring any federal income taxes.

The costs of establishing a timber stand must be paid many years before any income is derived. These reforestation costs can now be recovered with a 10-percent investment tax credit and a 7-year amortization period. There is a limit of $10,000 of reforestation costs per year, enough to prepare and plant from 50 to 100 acres a year.

Another advantage for small investors are cost sharing programs. For the past 10 years, many landowners have benefitted from the Forestry Incentive Program (FIP). This federal cost-sharing program pays up to 65 percent of the costs of replanting and managing thousands of acres of private timberlands. Benefits of FIP are restricted to owners of 1000 acres or less and of course available funds are limited. Nevertheless, in 1983, over 3,400 landowners in the South participated. Several Southern States now have similar programs supported with state and industry funds. Industry contributions are in the form of a self-imposed severance tax. These cost-share monies reduce the cost of getting trees growing and greatly boost the rate of return for timber growers.

State agencies also offer other inducements to profitable forest management and for good reason. Forestry and related wood processing ranks as one of the top three industries in most Southern States and the size of the industry depends on how much timber is grown. State forestry agencies produce and sell pine seedlings for planting at less than 2 cents apiece. They carefully monitor insect and disease infestations and work diligently to limit them on all lands.

Vigorous efforts at rural fire protection by state forest services have checked the devastating wildfires that ravaged the South early in this century.

Valuable technical assistance is also available, often free, from state foresters' offices, the Cooperative Extension Service, and state land grant universities. These services may include forest management advice, site visits, pest management, equipment rentals, and information on timber costs, markets, and prices. Although some services are available free, public foresters usually refer large projects to private forestry consultants.

Prices for standing pine timber in the South have increased steadily since World War II. In some areas, prices for timber on the stump have increased 1 to 3 points faster than inflation over the past three decades. In 1950, prices for sawtimber in the South averaged $10 to $20 per thousand board feet. Now, the same timber brings from eight to ten times as much. Not all timber prices have increased equally in all parts of the South, however. Pine sawtimber prices have gone up the fastest while prices for pulpwood from smaller trees has lagged in some areas.

Prices for most run-of-the-mill hardwoods have not even kept pace with inflation. However, prices for select trees of the most desirable hardwood species have skyrocketed. Now there is a very active export trade in high-grade oak and other quality timber. The best hardwood timber can bring ten times the value of average quality hardwoods on the market if exported to Europe. Needless to say, this top timber is not particularly common, but fine stands of hardwood can be produced in carefully managed forests.

A well developed price map has evolved in the South, with the highest pine prices in the Coastal Plain. These high price areas are caused by large concentrations of mills vigorously competing for limited timber resources. Timber processing firms have huge investments in plant and equipment and cannot afford to shut down, even if wood costs go up. Prices for pine timber are lower in the Piedmont Plateau, but industrial competition in adjacent regions has pulled prices up there too.

Timber management's image of low returns on investment is not accurate. The profitability of timber management is excellent on the best sites. A financial return exceeding 10 percent above inflation and after paying income taxes is possible for some of the best forest management options. A recent study we conducted in cooperation with the Forest Industries Council found that there were millions of acres of timberlands that could yield 4 to 10 percent above inflation if they were managed more effectively. This study considered investments that were in addition to existing management and did not include land costs. Unlike many short-term investment options, these returns can be sustained for one to three decades.

Even with land costs in the range of $300 to $600 per acre, buying bare land and growing timber can offer attractive returns. The actual profitability of each forest tract must be judged by itself, however; general guidelines are not particularly useful. Factors such as land cost, existing timber conditions, site productivity, expected management costs, and the strength of local markets can greatly affect potential returns.

Most people think that fire, insects, and diseases destroy large acreages of timberland each year. Certainly, many acres are affected each year, but these risks are less serious as threats to financial success than some would have us believe. I recently examined average loss figures on remeasured timber inventory plots in four Southern States. These statistics showed an average of 0.25 to 0.50 percent of the timber inventory is lost each year to all causes other than biological competition. I would challenge any other industry to offer figures that show inventory losses this low. These are averages for the pine forests in entire states and there are high risk areas and high risk timber stands in some places. Effective management, however, can reduce risks to an acceptable level.

Losses caused by fire, insects, and disease are modest because very effective public programs are in place to limit them. If these programs were reduced, or their effectiveness curtailed, losses would undoubtedly be higher. Even when timber is killed by some natural hazard, some income may be recovered through prompt and effective salvage operations.

In the last several years, some new information has become available to affirm the investment potential of timber. Here are some of the reasons that the prospects for Southern timber investments have attracted attention.

In comparison with other production regions, the South is one of the world's largest and most productive softwood growing areas. This region probably will be called upon to supply an increasing amount of timber to both domestic and export markets. The major southern pines--loblolly, slash, longleaf, and shortleaf--grow quickly and are relatively easy to manage. A well developed infrastructure of roads, railways, and ports exist as does an extensive forest products industry using modern equipment. Furthermore, a large proportion, approximately 70 percent, of the forest is held by nonindustrial private owners.

Technological advances have been made in the way southern pine forests are managed. Genetically improved trees that promise up to 15 percent additional yields are routinely planted. Advances in other treatments such as fertilization, drainage, and site preparation can change many less productive sites into very productive ones with acceptable costs.

Recent studies show that many pine forests are not regenerated to pine after they are harvested. These timberlands revert to less desirable (and less profitable) mixed hardwood forests if no action is taken to reestablish pine. This trend, uncovered by measuring the acres of young pine stands, indicates that the amount of available pine timber will drop sometime in the next 20 to 30 years. As a result, timber prices will increase at that time to meet demand. Although new price projections are now being made, the best projections available show continued real price increases for softwood timber in the South well into the next century.

The reasons why many landowners don't manage their timber more effectively are not completely known. In many cases, these individuals own land but lack the financial resources or interest to manage them for maximum profits. Also, they may have reasons for owning forest land other than financial gain. Some recent findings have suggested that many landowners believe that their land will grow a new stand of trees without any action. In the South, trees will even-

tually grow back with no work at all. However, in most cases, the resulting timber stand will be much lower in quality and value than a managed stand.

Another change that affects timber investors is that much timberland has become available recently. Some of the available land is a real bargain and I have seen asking prices as low as $350 to $450 per acre. Some informal sources say that around 7 million acres are available in the South. Some of this land is owned by forest products firms who want to sell part of their land holdings. The land may be located away from their mill or is separated from other holdings. Some firms feel that less land is needed for strategic purposes. Others see selling land as the least costly way to raise capital. In many cases, the company has a favorable chance of getting the timber whether they own the land or not. I think that land prices have not been this low in 25 years and there are some real bargains in land out there right now.

These factors point to the increasing profit potentials for southern timber growing. I am convinced that individuals who own high quality stands of southern pine timber in 15 to 20 years will find them in high demand at higher real prices than exist today.

Some of the advantages of timber stem from the nonmarket benefits that forests produce. How many investments can offer recreation potential in addition to profits? Many investors are finding that hunting on their land adds to the appeal of forest management as an investment. For those not interested in hunting, these rights can be leased for additional revenues each year.

Timber production has a few disadvantages. Growing timber to marketable size can take from 20 to 40 years. Forest management usually requires an initial investment, which is normally followed by a long production period with little cash flow. In the past it has been difficult to borrow money from banks to grow timber, especially on small tracts of land. Demand for sawtimber is affected by housing demand, and periodic slumps in housing starts temporarily reduce timber prices.

Many of these disadvantages can be overcome, however. Investors can join resources to invest in larger and more diverse timber properties. In some cases loans, secured with the land value, are available for timber management if sufficient income will be generated to pay back the loan in a few years. Risks can be spread by managing timber in different stages and in different locations. If markets are weak, trees can be left to grow until markets improve.

Timber production is not just for the big investor. New joint ventures offer individuals with as little as $500 the opportunity to invest in productive timber properties with relative safety. Several limited partnerships for timber production are being offered publicly by major brokers. One large firm had little trouble two years ago raising $10 million in just 8 days for such a venture. There are also numerous pension funds, trusts, and large private investment groups now growing trees for profit.

Interest in partnerships as vehicles for small investors to buy into timberland is not limited to multi-million dollar public offerings. Small investors are pooling their resources, forming private investment groups, and capitalizing on the long run returns from growing timber. When available

options are compared, such ventures look pretty good to investors who might not need the profits until their children or grandchildren reach college age.

Partnerships offer the opportunity for investors to own a piece of a large tract of timberland. Large tracts overcome some of the cash flow problems associated with ownership of trees that will not mature for many years. Large forests can produce periodic cash flow if timber stands of different ages are harvested as they are ready. Partnerships also reduce the need for active management of the investment. Management of the timberland itself can be handled by professional foresters without continual attention of the partners.

Foreign investors have shown surprisingly high interest in our southern timberlands. These investors are from places where timber has been depleted and wood products are expensive. Their interest is not necessarily in sending the wood home. They want a secure profit over the long run under favorable tax circumstances in a place that is politically stable.

As you can see, there are good reasons why production of pine timber in the South should be considered by serious investors. I have not provided statistics or research findings, but I can assure you that opportunities for profitable forest management do exist in the South. Growing trees is not for everyone, but the investor who desires a good return sustained over a long period of time with modest risk should look closer at the pine timber growing in the South.

1985 OUTLOOK FOR VEGETABLES

OUTLOOK '85

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Increased supplies of commercial vegetables, potatoes, and pulses will put downward pressure on 1985 prices. Based on 1984 production, the 1985 supply of processed vegetables, potatoes, and dry edible beans is forecast up through the first 2 quarters. Also, the strong 1984 performance of fresh vegetable prices suggests that growers will increase plantings in 1985.

The recent surge of popularity among consumers for vegetables and potatoes is expected to continue with the concern for improved health and the appearance of new vegetable products. The growing popularity of dual-purpose items such as broccoli and cauliflower will prompt increased production and usher in new product combinations and marketing techniques.

SUPPLY
Commercial Vegetables

1984/85 Prospects Brighten

Commercial vegetable production in the United States is slated for a 5 to 7 percent increase in 1984 compared to 1983. This seemingly large increase in output will bring commercial production of the major vegetable crops (fresh and processing) to between 427 and 435 million cwt, 21 to 29 million more than in 1983, but averaging closer to 1982's 429 million cwt.

The 5 to 7 percent increase in production results from an 11-percent increase in production of the four major processing vegetables (green peas, snap beans, sweet corn, and tomatoes) and a 1 to 3 percent increase in dual-purpose and fresh-market vegetables (broccoli, carrots, cauliflower, celery, sweet corn, lettuce, onions, tomatoes, and honeydews).

The prospects for further expansion of U.S. commercial vegetable production hinge on at least 3 important factors: (1) the continued increase in consumer demand for vegetables, (2) increased acreage and/or productivity, and (3) a strong competitive position vis-a-vis competing nations. Assuming production acreage is available in the United States and that total consumption will rise at least proportionately with population growth, total 1985 production of commercial vegetables is likely to rise.

Table 1.--Commercial vegetables 1/: U.S. production of major items in principal producing States, 1974-84

Year	U.S. production
	Million cwt
1974	375.3
1975	407.4
1976	370.0
1977	402.9
1978	382.2
1979	413.2
1980	379.5
1981	377.3
1982	429.2
1983	406.4
1984 2/	427-435

1/ Includes fresh and processing snapbeans, broccoli, carrots, cauliflower, celery, sweet corn, honeydew melons, lettuce, onions, green peas, and tomatoes.
2/ Unofficial ERS estimate.

SOURCE: Statistical Reporting Service, USDA.

Potatoes, Sweetpotatoes, and Dry Edible Beans

1985 Production Increases Smaller

Total commercial production of potatoes, sweetpotatoes, and dry edible beans is estimated up 8.5 percent in 1984 compared to 1983. Total 1984 production, 392.1 million cwt, is primarily of potatoes, up 7.5 percent, at 358.8 million. Dry edible beans, with a 31 percent increase, is estimated at 20.3 million cwt, about at the 1979 level and short of the export-led 32.8 million in 1981. Sweetpotato production, rebounding from a 12.1 million cwt crop in 1983, is up 8 percent to 13.1 million in 1984, about 2 percent above the 1974-83 average.

The prospects for greater production of potatoes, sweetpotatoes, and dry edible beans in 1985 will improve if higher demand improves prices. For potatoes, the recent introduction of baked-potato entrees into fast-food and other restaurant menus could mitigate extraordinary price declines that usually follow a large fall crop. Increased 1985 production of sweetpotatoes is unlikely after reaching 13.1 million cwt this year. Also unless the export demand for dry edible beans improves or dealers are able to lower apparent stocks, 1985 production is not likely to improve.

Table 2.--Commercial potatoes, sweetpotatoes, and dry edible beans: U.S. production, 1974-84

Year	U.S. production
	Million cwt
1974	376.1
1975	352.3
1976	388.8
1977	383.8
1978	398.4
1979	376.4
1980	341.6
1981	386.2
1982	395.5
1983	361.5
1984 1/	392.1

1/ Preliminary.

Source: Statistical Reporting Service, USDA.

DEMAND
Per Capita Consumption

Slight increases in 1985

Total per capita consumption of the nine major fresh vegetables (broccoli, carrots, cauliflower, celery, corn, onions, tomatoes, and honey dew melons) levelled at about 78 pounds in 1983, and may increase only slightly in 1984, as population growth offsets production increases. Average consumption of fresh vegetables increased nearly 1 percent per year over the last 9 years, partially due to information explaining improved health effects of diets high in certain vegetables. As more medical information is developed, or more consumers are aware of this information, perhaps average consumption will increase.

Total per capita consumption of canned snap beans, green peas, sweet corn, and tomatoes levelled over the last 3 years, averaging 34 pounds (product weight). This recent average is a drop from the average of 37 pounds during 1974-76. As per capita consumption dropped, so did the number of companies, employees, and production workers in the canned fruit and vegetable industry. According to the Census of Manufacturers, between 1977 and 1982, the total number of companies decreased 21 percent to 514, the number of all employees decreased 14 percent to 71,300, and the number of both production workers and annual hours worked decreased 15 percent to 16,400 and 114.7 million, respectively. Increased per capita consumption of canned vegetables could result from increased away-from-home consumption as consumers seek more convenience and less time spent in preparing vegetable items.

Growth in per capita consumption of frozen vegetables has outstripped both fresh and canned vegetables. During the last 3 years, total per capita consumption of frozen snap beans, carrots, peas, broccoli, cauliflower, and corn averaged about 7.7 pounds (product weight), up from 6.4 pounds during 1974-76. The promise of frozen foods for high gross margins in retail markets is likely to encourage increased offerings of frozen vegetables in the competition for valuable shelf space. Also, new product forms, in which vegetables are complements to other frozen entrees, improves the prospects of increased demand in 1985.

A preliminary report of the 1982 Census of Manufacturers details a 4.3-percent increase in the number of companies producing frozen fruits and vegetables from 1977 to 1982. The dominant vegetable item is frozen fried potatoes at $3.7 billion in 1982, but the growth items are frozen green beans, broccoli, cauliflower, green peas, other potato products, sweet corn, and southern greens.

In summary, the demand for vegetables is expected to increase in 1985. The reasons include increased awareness of the beneficial health effects of vegetable consumption, and the expected increases in supply and the number of new products available.

Table 3.--Commercial vegetables: U.S. per capita consumption of major items, 1974-84

Year	per capita consumption
	Pounds (fresh equivalent weight)
1974	168
1975	168
1976	172
1977	174
1978	173
1979	181
1980	168
1981	166
1982	172
1983	179
1984 1/	181-183

1/ Unofficial ERS estimate.

Source: Statistical Reporting Service, USDA.

Socioeconomic Factors Affect Demand

A statistical analysis of the 1977 Nationwide Food Consumption Survey reaffirms the notion that socioeconomic and demographic characteristics of the U.S. population affect demand for vegetables 1/. For example, it was shown that, on average, for a 10-percent increase in purchasing power, weekly expenditures on all vegetables increased about 1.1 percent. For fresh vegetables, however, the increase is closer to 1.5 percent; vegetable juices, 2.7 percent; and frozen vegetables, 4.8 percent. Thus, increased income, other things being equal, will offset different vegetable products in different ways.

Also, adults 40 to 64 years old are apt to consume more fresh vegetables than younger people. Other studies using cross-sectional data have found that women in the household tend to increase per household vegetable consumption. Other factors, such as region, residence, race, and foodstamp use are known to affect demand for vegetables. Thus, as household size and composition undergo changes, so will vegetable consumption patterns.

TRENDS

Minor Acreage Shifts Continue

The 1982 Census of Agriculture reports a decline of about 6 percent in the number of commercial vegetable farms and acreage between 1977 and 1982. The number of farms producing vegetables dropped from 73,183 in 1978 to 69,109 in 1982, and acreage declined from 3.5 million to 3.3 million acres. During this period, however, the number of farms and acres in production of broccoli and cauliflower increased as demand increased for these fresh and frozen items.

The number of farms producing commercial broccoli and cauliflower in 1982 increased 78 and 37 percent, respectively, compared to 1978, while their harvested acres increased 18 and 17 percent. In areas other than California, the leader in U.S. broccoli production, the above-average increases in acreage were concentrated in the Northwest, Texas, and Mid-Atlantic States. The same general trend holds for cauliflower acreage.

Through 1985, minor shifts in the location of commercial vegetable production are expected to continue for commodities experiencing current surges in demand. Vegetable items, such as broccoli and cauliflower, which are versatile in their appeal to consumers and in adaptation to new product forms are likely to increase their market share as consumers' eating habits change.

1/ Smallwood, David M. and James R. Blaylock. "Household Expenditures for Fruits, Vegetables, and Potatoes." USDA, Economic Research Service, Technical Bulletin No. 1690, 1984.

Table 4.--Dual purpose vegetables 1/: U.S. production and proportion for fresh-market use, 1974-84

Year	Fresh	Total
	Percent	Million cwt
1974	55	29.9
1975	62	25.9
1976	62	26.6
1977	54	28.6
1978	55	29.0
1979	56	31.4
1980	62	30.5
1981	64	33.2
1982	63	37.6
1983	65	36.5
1984 2/	66	38.2

1/ Includes, broccoli, carrots, and cauliflower
2/ Unofficial ERS estimate.

SOURCE: Statistical Reporting Service, USDA.

Market Technology Will Progress

New market technologies in information systems, produce delivery, and product development will increase the competitive status of progressive firms in the vegetable industry. Electronic information transfer will lower the transaction costs of matching supply with demand and increase the timeliness of other market information. Computerized inventory control will increasingly allow retailers to cut losses due to spoilage and in some cases allow direct purchase, all of which will reduce the costs of handling.

Vegetable products, requiring new "light-processing" technologies, are being introduced to appeal to consumers who desire fresh-market quality and extended shelf life. Irradiation, modified atmospheres, and new packaging materials are being tested for new product combinations with traditional vegetable crops.

Biotechnology Advances

Current advances in plant breeding, metabolism, and genetics provide information necessary to reduce industry use of costly chemical fertilizers, pesticides, and irrigation water. Combining the techniques of plant tissue culture with the science of molecular biology could produce crops with natural insect or disease resistence. Increased information about vegetable respiration and ripening could offer ways to extend product life.

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The fruit industry expects small supplies of all fresh fruit during 1984/85. Although the citrus crop is forecast to be moderately larger than 1983/84, it is still sharply below 1982/83. The freeze in Florida and Texas last December that severely damaged trees has caused the decrease in production. Citrus supplies from Texas are expected to be insignificant and are not being forecast. The Florida citrus canker hasn't yet had any impact on crop supplies. Primarily reflecting smaller crops of grapes, pears, and apples, supplies of noncitrus fruit this winter will be smaller than a year ago. Consequently, grower prices are expected to be relatively high. Contract prices for canning noncitrus fruit were negotiated at substantially to sharply higher levels than a year ago because of depleted carryover stocks for most canned items. In contrast, the field prices for natural seedless raisins and tart cherries and strawberries for freezing were sharply lower than last year. Even with a larger citrus crop, smaller supplies of processed citrus items will keep prices of oranges and grapefruit firm. Overall, despite the small output, prospects for relatively high prices will still result in good grower returns during 1984/85. With the slow rate of increase in the costs of inputs, the fruit industry should have a profitable year.

The small supplies and rising demand should keep retail prices for most fresh and processed fruit relatively firm. However, with only a moderate increase in the cost of food marketing, retail fruit prices are likely to increase only moderately in 1985 from 1984. According to the U.S. Department of Agriculture, the labor cost for food retailing has risen only 0.6 percent from a year earlier. Transportation rates, a major component of fresh fruit marketing cost, have advanced only 4.7 percent. Including all other items, the index of food marketing cost rose 3.7 percent this year to 358.1 (1967=100) in September, compared with 345.2 a year earlier. During the 1984/85 season, supplies of most fruit should be adequate in supermarkets and consumers will pay moderately higher prices.

GENERAL PRICE OUTLOOK

The index of grower prices for fresh and processing fruit through October this year has averaged 45 percent above a year ago. The October index stood at 287 (1977=100), 150 percent above a year earlier. Substantially to sharply higher prices were indicated for all fruit, except strawberries. Prices are expected to decline this fall and early winter, but are still expected to remain above a year ago, reflecting rising demand and smaller supplies of noncitrus. In addition, the

smaller early, mid-season, and navel orange crops combined with rising processor demand, will hold citrus fruit prices relatively firm through the mid-winter.

Table 1.--Index of quarterly price recieved by growers for fresh and processing fruit, 1981-85

Year	1st	2nd	3rd	4th	Annual average
			(1977=100)		
1981	119	123	135	142	130
1982	137	150	248	166	175
1983	129	128	127	126	128
1984	129	166	233	203 1/	183 1/
1985 1/	157	170	203	172	176

1/ Estimated.
SOURCE: Agricultural Prices, SRS, USDA.

Reflecting higher prices of apples and citrus, retail prices of fresh fruit have averaged moderately above last year's levels. The September BLS index of consumer prices for fresh fruit stood at 364.8 (1967=100), up 15 percent from a year ago. As supplies of fresh apples and citrus increase seasonally, retail prices are expected to decline through early winter. However, smaller supplies of apples, winter pears, and early, mid-season, and navel oranges will likely hold prices relatively high.

Table 2.--Quarterly Consumer Price Index for fresh fruit, 1981-85

Year	1st	2nd	3rd	4th	Annual Average
			(1967=100)		
1981	256	276	302	279	278
1982	289	322	333	293	309
1983	274	301	324	285	296
1984	295	321	355	320 1/	323 1/
1985 1/	315	330	360	335	335

1/ Estimated.
SOURCE: Bureau of Labor Statistics.

Reflecting higher prices for canning fruit and frozen concentrated orange juice (FCOJ), retail prices of processed fruit have been moderately higher than a year ago. Packers recently announced price hikes for most canned fruit and good demand will keep FCOJ prices firm--so, retail prices of processed fruit are expected to remain firm during 1985.

Table 3.--Quarterly Consumer Price Index for processed fruit, 1981-85

Year	1st	2nd	3rd	4th	Annual Average
			(Dec. 1977=100)		
1981	134	142	143	145	141
1982	148	148	149	150	149
1983	151	150	151	151	151
1984	156	162	164	166 1/	162 1/
1985 1/	171	173	175	177	174

1/ Estimated.
SOURCE: Bureau of Labor Statistics

FRESH CITRUS

The November 1 forecast of U.S. citrus production (excluding grapefruit in California's "other areas" and the Texas citrus crop) for 1984/85 is estimated at 11.5 million tons, 8 percent above 1983/84, but still 15 percent below the 1982/83 crop (including Texas). Larger crops are indicated for all citrus except tangerines. The citrus canker has not yet been forecast to have any impact on Florida citrus supplies.

Table 4.--U.S. citrus fruit production: 1982/83, 1983/84 and indicated 1984/85

Crop	1982/83	1983/84	1984/85
		1,000 tons	
Oranges	9,519	7,238	7,783 2/
Grapefruit	2,340	2,040	2,126 2/
Lemons	963	807	1,045
Limes	68	60	64
Tangelos	171	162	167
Tangerines	229	200	170
Temples	211	130	167
Total 1/	13,501	10,637	11,522 2/

1/ Excludes California grapefruit in "other areas." 2/ Excludes Texas citrus crop.
SOURCE: Crop Production, SRS, USDA.

Oranges

The forecast of U.S. orange production for 1984/85, excluding Texas, is 184 million boxes, 10 percent above last season's freeze-damaged crop (including Texas), but 16 percent below 1982/83. In Florida, the forecast for the production of all oranges is 119 million boxes, 2 percent above last season's crop, but 15 percent below 1982/83.

Production of Florida early and mid-season varieties, at 59 million boxes, is 15 percent less than last season and 16 percent below the 1982/83 crop. Florida Valencia production is expected to total 60 million boxes, 28 percent more than last season's crop, but 14 percent below 1982/83 production. However, Florida orange production is not likely to recover to a historically high level for several years, reflecting the decreased bearing acreage as a result of last December's freeze. California's 1984/85 orange crop is forecast at 62 million boxes, 28 percent more than last season, but 19 percent below 1982/83. Arizona's outturn of all oranges is expected to total 2.7 million boxes, 50 percent more than last season, but 29 percent below the 1982/83 crop. Orange supplies from Texas are expected to be insignificant and are not being forecast because of the December 1983 freeze that severely damaged trees.

On-tree returns for oranges for all sales so far have averaged significantly above a year ago. In October, on-tree returns advanced further to $15.01 a box, compared with $1.06 a year ago. Orange prices are expected to fall seasonally through early winter. However, the smaller supplies of early, mid-season, and navel oranges and rising demand from processors will keep orange prices relatively high. In addition, reduced competition from smaller crops of apples and winter pears will also help hold orange prices firm. Consequently, retail prices will also hold relatively firm.

Foreign demand for U.S. fresh oranges declined sharply during 1983/84. Reduced exports were recorded for almost all areas. The high prices, combined with the strong U.S. dollar, have severely reduced the demand for U.S. oranges in European markets. Shipments to Canada, our major customer, also fell considerably. However, Hong Kong, the second largest market, has purchased only moderately less than a year ago. Also, purchases from Japan, the third-ranked market, showed only a slight decrease so far this season. Because the U.S. dollar has remained strong, prospects for U.S. orange exports do not look very favorable, even though U.S. prices are expected to average lower than in 1983/84. On the other hand, the new trade agreement between the United States and Japan for an increased import quota of U.S. oranges will raise shipments to Japan during 1984/85.

Grapefruit

November 1 prospects for this season's U.S. grapefruit crop (excluding California's crop outside of the Desert areas and Texas grapefruit), indicate 51.8 million boxes, 5 percent above last season, but down 10 percent from the 1982/83 crop (including Texas grapefruit). Florida's total grapefruit forecast, 44.5 million boxes, is 9 percent above last season and 13 percent more than in 1982/83. Prospective production in California's Desert areas, at 3.8 million boxes, will be 14 percent above the previous season, but 7 percent less than the 1982/83 crop. Arizona growers expect to harvest 3.5 million boxes, compared with 2.1 million last year. As with oranges, grapefruit supplies from Texas are expected to be insignificant and are not being forecast.

Despite the temporary embargo on interstate shipments of all fresh Florida citrus to other citrus-growing States due to the citrus canker in nurseries, shipments of fresh grapefruit are running well ahead of last season's pace. Demand for Florida grapefruit for the fresh

market is expected to rise because supplies of grapefruit from Texas will be limited. However, export markets for fresh grapefruit do not look favorable in view of the continued strong U.S. dollar. Carryover stocks of most processed grapefruit products are down substantially, so processor demand is expected to be strong this season. Even with higher prices, the movement of most grapefruit juice has increased and will probably continue so during 1984/85 in light of the relatively good economy. Thus, the larger crop is not likely to exert any downward pressure on prices. Opening f.o.b. prices for Florida fresh grapefruit were generally above a year ago. F.o.b. prices are expected to fall with increased volumes, but they will probably remain relatively high through the early winter.

Lemons

The Arizona-California lemon crop (tree crop available for harvest) for 1984/85 is expected to total 27.5 million boxes, 29 percent more than 1983/84. The California crop, estimated at 22.3 million boxes, is 29 percent greater than last season. Arizona's output is expected to total 5.2 million boxes, 30 percent more than last season.

Despite a larger crop, total movement through early November was moderately behind last year's pace. However, deliveries to the fresh market have been near last season's level. In response to reduced shipments, f.o.b. prices for fresh lemons have averaged moderately above a year earlier. F.o.b. prices are expected to fall as the season progresses. This season's large crop should push lemon prices below 1983/84's levels.

PROCESSED CITRUS FRUIT

Because of the sharply smaller 1983/84 Florida citrus crop, the quantity for processing use was down 22 percent from 1982/83. The portion of citrus fruit used for processing was also down, from 68 percent in 1982/83 to 67 percent in 1983/84.

The smaller Florida orange crop caused processing use to drop considerably, but the portion of oranges used for processing, at 11.4 percent, was up slightly from 1983/84. Although the quantity of oranges--including tangelos, Temples, tangerines, and K-early citrus--used for FCOJ fell 18 percent from 1982/83, it still accounted for 82 percent of the oranges used for processing, compared with 85 percent in 1982/83. Florida's 1983/84 pack of FCOJ totaled almost 122 million gallons (excluding reprocessed), down 29 percent from 1982/83 because of the December freeze. Processors only recovered 1.29 gallons a box at 42.0 degree Brix, compared with 1.48 for the 1982/83 crop. Consequently, even with heavy imports, the smaller carryin stocks and pack still pushed the total supply of FCOJ below 1982/83. Despite the price escalation, movement of FCOJ has been relatively good. F.o.b. prices for FCOJ (unadvertised brand, f.o.b. Florida canneries) have been steady at $5.04 a dozen 6-ounce cans, compared with $3.95 a year earlier. With the smaller supplies and relatively good movement, stocks in late October were 5 percent below a year earlier. It appears that the carryover could approach 40 million gallons, compared with 43 million a year earlier.

The larger orange crop and higher juice yield will result in a sharply larger pack of FCOJ in 1984/85. The forecast for the 1984/85 juice yield is 1.46 gallons a box at 42.0 degree Brix. In addition, a larger quantity of Florida oranges will likely be used for processing juice because of lower stocks and the availability of more California oranges for the fresh market. Nevertheless, domestic supplies will still be tight because of the prospect for moderately reduced carryin stocks. To meet domestic demand, imports will stay heavy. Thus, if demand remains relatively good, prices are not likely to weaken.

During 1983/84, Florida packers processed 275 million gallons of chilled orange juice (excluding single-strength reprocessed), up 48 percent from 1982/83. The increase was caused entirely by the sharply increased quantities of frozen concentrates that were processed. Reversing the downward trend, movement was strong throughout the season, despite higher prices. Even with strong movement, the larger pack caused ending stocks to be well above 1982/83. Rising demand, combined with a larger crop and higher juice yield, will result in a larger pack of chilled orange juice in 1984/85. However, if movement remains strong, prices are likely to stay firm.

FRESH NONCITRUS

The 1984 noncitrus crop--including major tree fruits, grapes, and strawberries--is forecast at 12.9 million tons, down fractionally from last year. The decline primarily reflects a moderately reduced grape crop. This summer's hot weather and thunderstorms in California reduced grape production. The pear crop is estimated to be 11 percent smaller, with a 14-percent reduction in winter pear production. The apple crop is down 1 percent from 1983. Consequently, fresh noncitrus fruit supplies will be lower this fall and winter, and prices are likely to be higher than a year ago.

Table 5.--U.S. noncitrus fruit, total production, 1982, 1983 and indicated 1984

Crop	1982	1983	1984
		1,000 Tons	
Apples	4,058	4,157	4,117
Apricots	114	95	124
Cherries	311	257	332
Grapes	6,554	5,494	5,019
Nectarines	178	186	170
Peaches	1,147	895	1,273
Pears	804	775	688
Prunes and Plums	588	684	684
Strawberries	416	423	475
Total	14,170	12,966	12,882

SOURCE: Crop Production, SRS, USDA.

Apples

The final forecast of the 1984 U.S. apple crop places production at 8.23 billion pounds, down 1 percent from last year. Crop prospects in the East indicate a larger output in most States, with a crop of 3.3 billion pounds, 2 percent above a year ago. However, New York, the leading apple State in the East, expects a crop of 1.06 billion pounds, off 4 percent from last year. In the Central States, crop prospects, at 1.24 billion pounds, are up 4 percent. The increase is primarily attributed to Michigan, with a crop of 770 million pounds, up 3 percent, and Ohio, with a crop of 135 million pounds, up 35 percent. Prospects in the Western States showed a mixed pattern, with an outturn of 3.7 billion pounds, 5 percent below 1983. Washington, the Nation's leading apple State, expects 2.85 billion pounds, down 5 percent. At 490 million pounds, apple output in California, the second largest producing State in the West, is almost 7 percent larger than in 1983.

Shipments of fresh apples are running well behind last year's pace because of the late harvest. The sharply reduced shipments so far are primarily caused by the slow movement of apples from Washington. F.o.b. prices for fresh apples at major shipping points showed a mixed pattern, with strong prices in Washington. However, as the season progresses, apple prices are expected to decline. With a smaller crop in Washington and rising demand, prices for fresh apples are expected to stay relatively firm through this winter. Processor demand for this year's apple crop is also likely to rise because carryover stocks of most canned apple products are moderately below last year. Movement of apple products, particularly apple juice, has been strong and is expected to remain so during 1984/85. Good movement will encourage packers to process a large quantity of apples. With rising demand from packers, prices for processing apples have been negotiated at higher levels than last season.

Grapes

The final forecast of the 1984 U.S. grape crop is 5.02 million tons, 9 percent below last year. Prospects in California point to a crop of 4.48 million tons, down 9 percent from last year, with smaller crops expected for all these types--table, wine, and raisin grapes. However, the California grape crop still accounts for 89 percent of the U.S. total, the same as 1983.

Reflecting smaller crops in several major producing States, total grape production in States other than California is down 8 percent from 1983. Washington, with a crop of 185,000 tons, is posting a drop of 19 percent from 1983. The Pennsylvania crop, at 60,000 tons, is 4 percent below last year. At 48,000 tons, the Michigan crop is 20 percent less than in 1983. In contrast, New York's forecast of 195,000 tons is 2 percent above last year.

Despite a smaller crop, shipments of fresh table grapes totaled 914 million pounds through early November, up 5 percent from a year earlier. In response to good demand and seasonally reduced supplies, f.o.b. prices have strengthened. By early November, Emperors were quoted at $9 a 23-pound lug in the Central San Joaquin Valley, California, compared with

$6 a year earlier. Although supplies of table grapes for the fresh market will likely be larger this year because of the expected weak market for competing uses of multipurpose varieties, good demand will probably hold prices relatively firm. Because of the heavy supplies, the field prices for natural seedless raisins has been settled at $700 a ton, down sharply from last year. The slower growth in wine shipments and larger supplies of raisins have resulted in a mixed pattern of grower prices for wine grapes. Prices vary greatly among producing areas, supplies, and varieties of grapes. Sluggish domestic shipments have held wine prices steady. The BLS Consumer Price Index for all wines during the first 9 months of this year averaged slightly below a year ago. With weak grower prices for wine grapes and larger imports of foreign wines, wine prices are expected to remain relatively steady.

Pears

The final forecast of the U.S. pear crop is 687,500 tons, down 11 percent from 1983. Output of Bartlett pears in California, Oregon, and Washington is forecast at 411,000 tons, 11 percent less than 1983. Production of Pacific Coast pears other than Bartletts is forecast at 232,500 tons, 14 percent less than last year's crop, reflecting reduced crops from both Oregon and Washington, which are the principal suppliers of pears for the winter and spring fresh markets. The smaller crop pushed shipments of fresh Bartletts moderately below a year ago. F.o.b. prices for fresh Bartletts were substantially higher than a year ago. The smaller crop and rising processor demand are the primary contributors to higher prices. Prices for winter pears are also expected to be strong in light of a sharply reduced crop and less competition from smaller apple production.

Depleted carryover stocks of canned pears have caused higher prices for Bartletts for canning. California growers and canners have agreed on a field price of $175 a ton for first grade 1-A Bartletts (defined as 2-3/8 inches and meeting a maturity pressure of 15 pounds), compared with $135 last year. The field price has been settled in the Northwest at a cash price of $187.50 a ton for No. 1 grade Bartletts. This compares with a cash price of $122.50 and a deferred price of $130 last year. Thus, higher producer prices and smaller supplies are expected to show up in the prices of canned pears at all levels.

PROCESSED NONCITRUS

Supplies of processed noncitrus fruit will be mixed during 1984/85. Even though the canned fruit pack is expected to be up for some items, depleted stocks will still result in small supplies for most canned fruit. Consequently, prices are expected to remain firm. In contrast, supplies of dried fruit, particularly raisins and prunes, will be adequate to ample; raisin prices will be lower than a year ago. The total supply of frozen fruit and berries will be ample, particularly tart cherries and strawberries. Supplies of most other frozen fruit and berries are adequate this season. Consequently, these large supplies and the lower cost of fruit and berries will keep prices weak.

The 1984/85 pack of some canned noncitrus fruit will be moderately or sharply above last year. A trade source indicates that the unaudited pack of canned Clingstone peaches totaled 18.7 million cases (No. 24/2 1/2's), up 75 percent from last year. A moderately increased pack of

canned fruit cocktail--8.8 million cases (No. 24/2 1/2's)--was also reported. The canned mixed fruit pack amounted to 2.3 million cases (No. 24/2 1/2's), up 75 percent from last year. Deliveries of California Bartlett pears for canning were up moderately from a year earlier, while total Bartlett tonnage for canning in Oregon and Washington is currently estimated to be well below last year.

Because of the larger crop in Michigan, the leading cherry-producing State, the total pack of canned tart cherries is expected to be sharply above last year. In contrast, according to the Northwest Food Processors Association, Northwest canners packed 197,631 cases (24-2 1/2's) of dark sweet cherries, down 18 percent from last year. The 1984 pack of canned light sweet cherries totaled 65,287 cases (24-2 1/2's), down 50 percent. Nevertheless, the overall pack of canned red tart cherries is likely to be well above 1983, but that of canned light sweet cherries is down. Thus, even with smaller carryin stocks of canned tart cherries and larger stocks of canned sweet cherries, overall supplies of canned cherries should be adequate to ample. With the record plum crop in California, the 1984 canned purple plum pack should be larger than last year. The larger apple crops from the Eastern and Central States will increase the canned apple-product pack. In addition, rising demand for canned apple juice will also direct more apples for processing use. However, total supplies of canned apple items are not expected to increase appreciably because of a reduced carryover.

In view of small supplies and higher costs of fruit, prices of canned fruit at all levels will remain firm this season. The BLS October producer price index for canned fruit, at 273.1 (1967=100), was almost 7 percent higher than a year ago. Price hikes for most canned fruit have recently been announced by packers.

Although the California grape crop is moderately smaller, output of raisins this season could still be relatively large. At present, the trade is forecasting a total raisin output of 325,000 tons, down substantially from 1983. Even with the smaller production, heavy carryin stocks will still result in heavy supplies of raisins during 1984/85. Consequently, raisin prices will be lower in response to lower field prices and heavy supplies. The BLS October producer price index for raisins was 357 (1967=100), down 30 percent from a year earlier and the lowest since August 1978.

Production of dried prunes, the other major dried fruit, is currently estimated at 134,400 tons (natural conditions), down 4 percent from 1983. With fractionally smaller carryin stocks, the total supply of dried prunes for 1984/85 is estimated at 183,667 tons, down 3 percent from last year, according to the Prune Administrative Committee. Early season shipments of dried prunes through September were down 12 percent from last year because smaller deliveries to domestic markets more than offset larger exports. Exports recorded a 14-percent increase, primarily reflecting shipments to Italy, which more than doubled its purchases compared with a year earlier. However, export demand is not likely to be bright because France, a major producing country, expects a near-record crop this year. The October BLS producer price index for dried prunes stood at 258.3 (1967=100), slightly above a year ago.

The 1984 pack of frozen fruit and berries will vary this season. Freezers in California, the leading State, have received 15-percent less strawberries through late October from a year earlier. However, U.S. imports of frozen strawberries from Mexico have been well above a year ago. Deliveries of strawberries to freezers in Oregon and Washington this season showed decreases from last year. Freezers' receipts for blackberries were up slightly in Washington, but down in Oregon. Deliveries of blueberries to freezers in Oregon and Washington have indicated sharp declines. Likewise, deliveries of blueberries to freezers in Michigan, the leading State, also showed a sharp decrease. Reflecting a sharply larger crop, the total quantity of tart cherries used for freezing increased sharply from last year. Even with smaller carryin stocks, total supplies of frozen tart cherries are heavy. Demand for frozen fruit and berries will likely stay relatively good, but the ample supplies, coupled with lower costs for crops, should weaken prices.

TREE NUTS

Supplies of tree nuts will be plentiful during 1984/85. A record almond crop is forecast, and walnut and filbert production is expected to be well above last year. However, the pecan crop will be moderately smaller. Prices of almonds and pecans are expected to fall below last year, but those of filberts and walnuts may be near year-earlier levels.

The 1984 California almond crop was forecast at a record 520 million pounds, shelled basis, up 117 percent from the 1983 weather-reduced outturn. With a record crop, a major California almond handler recently announced an across-the-board price reduction of approximately 20 to 25 percent from last year. Demand is a key factor for this season's almond prices. However, establishment of a 25-percent reserve by the Secretary of Agriculture under authority of the marketing order probably has moderated the price decline. Domestic shipments of almonds, so far this season (July 1-September 30), were down 12 percent from a year earlier. Primarily reflecting bigger shipments to the Soviet Union and West Germany, almond exports were 16 percent more than a year earlier. Consequently, exports accounted for 66 percent of total shipments, compared with 60 percent a year earlier. However, shipments to Japan recorded a 31-percent reduction. Export prospects are promising in view of the record California crop and reduced supplies from Spain. With lower prices and relatively good demand, the outlook for the domestic market will improve.

The 1984 filbert crop in Oregon and Washington is forecast at 14,000 tons, 71 percent greater than last year. Foreign output in the major producing countries is expected to show sharp declines. Turkey, the leading producer, expects a crop of 300,000 tons (in-shell basis), down 29 percent from last year's record crop. Italy, the second largest producer, expects to harvest 90,000 tons, down one-fourth from 1983, while Spain will have a 42 percent smaller crop. Consequently, total world commercial production will be 17 percent below 1983. However, smaller world production is not likely to boost grower prices appreciably for U.S. filberts because of heavy supplies of U.S. almonds.

The October 1 forecast of the U.S. pecan crop places production at 250.4 million pounds (in-shell basis), 7 percent below last year. The smaller production is mainly caused by reduced crops in Alabama, Louisiana, and Texas. The carryover stocks were moderately larger than a year ago. Thus, the total supply of pecans will still be relatively large, even with a smaller crop. Consequently, the large supplies, combined with bigger crops of almonds and walnuts, are not likely to strengthen pecan prices appreciably.

The 1984 California walnut crop was forecast at 225,000 tons, in-shell basis, 13 percent more than last year's production. The 1984/85 marketing year got off to a fast start; shipments of in-shell walnuts were well above last year, while those of shelled walnuts were fractionally less than a year ago during the first 2 months of 1984/85 (August and September). The overall increases were recorded for both domestic and export markets. Even with a larger crop, the total supply of walnuts is not up appreciably because of significantly reduced carryin stocks. If demand remains strong, the smaller pecan crop may help maintain walnut prices.

PER CAPITA FRUIT CONSUMPTION

Per capita fruit consumption in 1983 is estimated at 236.1 pounds (fresh weight equivalent), 19.2 pounds or 9 percent above 1982. The increase is shared by both citrus and noncitrus fruit.

Per capita fresh fruit consumption rose from 87.1 to 94.9 pounds between 1982 and 1983, primarily reflecting increased citrus consumption. Per capita fresh citrus consumption advanced 28 percent with gains in all fresh citrus fruit. Oranges, the leading citrus fruit, contributed most of the increase with 5.9 pounds. Consequently, oranges accounted for 59 percent of total fresh citrus consumption. Larger orange consumption was caused by increased supplies and sharply lower prices.

Per capita fresh noncitrus fruit consumption, estimated at 63.2 pounds, was up only slightly. In response to higher prices, consumption of bananas, the leading fresh fruit, fell from 22.6 to 21.2 pounds between 1982 and 1983. Apple consumption recorded another gain, from 17.9 pounds in 1982 to 18.5 in 1983. Per capita fresh grape consumption continued its upward trend to 6 pounds, compared with 5.7 pounds in 1982, due partly to expanded advertising and promotion.

Per capita consumption of processed fruit (fresh weight equivalent) rose from 129.8 pounds in 1982 to 141.2 in 1983, with increases indicated for both citrus and noncitrus. Processed citrus consumption rose from 88.2 pounds per person to 97.6 pounds in 1983. Lower prices strengthened consumer demand for processed citrus products, particularly FCOJ. Frozen concentrated citrus juice consumption jumped from 70.3 pounds to 76.3 pounds.

Reflecting good gains in canned juice, mainly apple juice, the per capita consumption of processed noncitrus fruit rose to 43.6 pounds in 1983 from 41.6 pounds a year earlier. Consumption of both canned and dried fruit was down slightly while that of frozen fruit remained unchanged.

Per capita fruit consumption in 1984 is preliminarily projected at 223.3 pounds (fresh weight equivalent), 12.8 pounds or 5 percent below 1983. The decrease is primarily attributed to sharply reduced fresh citrus consumption resulting from higher prices. Higher prices also contributed to slight decreases for processed citrus items. Consequently, per capita citrus fruit consumption declined from 129.3 pounds in 1983 to 114.7 pounds in 1984 (fresh weight equivalent). In contrast, per capita noncitrus consumption is estimated to be up slightly--from 106.8 pounds in 1983 to 108.6 pounds in 1984--with every item showing slight increases.

Table 6.--Per capita fruit consumption, 1980-84

Year	Total	Fresh	Canned 1/	Chilled 1/	Frozen 1/	Dried
	Pounds, fresh weight equivalent					
1980	225.3	89.8	48.4	12.3	65.8	9.0
1981	222.1	86.8	51.3	8.7	65.0	10.3
1982	216.9	87.1	37.7 4/	7.4	73.6	11.1
1983 2/	236.1	94.9	42.0 4/	8.6	79.6	11.0
1984 3/	223.3	86.0	39.8 4/	7.6	78.5	11.4

1/ Canned, chilled, and frozen includes fruit and juice. 2/ Preliminary. 3/ Estimated. 4/ Excludes pineapple products.

SOURCE: Economic Research Service, USDA.

REAGAN II: OUTLOOK FOR FRUIT AND VEGETABLE MARKETING ORDERS

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I. Introduction

In describing the outlook for fruit and vegetable marketing orders under the second Reagan administration, the most appropriate term is cloudy. The first Reagan administration began with scrutiny of the economic efficiency of fruit and vegetable marketing orders. At the request of Vice President Bush's task force for regulatory relief, the Department of Agriculture conducted a comprehensive study of how orders affected the economic welfare of producers and consumers. Following this analysis, Secretary Block issued a related set of guidelines representing a gentle urging to marketing order administrative committees to reduce the restrictiveness of certain order provisions.

The Office of Management and Budget (OMB) began to assume an active role in marketing order decision making. In 1982, OMB effectively overturned a Department of Agriculture decision to approve establishment of a reserve pool under the tart cherry marketing order. OMB also reviewed and passed judgment on weekly prorate recommendations of the California-Arizona orange and lemon administrative committees. In May of 1983, Secretary Block issued more stringent guidelines for 11 marketing orders tagged by the Cabinet Council on Food and Agriculture as possessing restrictive or potentially restrictive volume controls.

These 11 orders contained authorization for use of allotment, allocation/reserve, and prorate programs. The Secretary's memo to applicable administrative committees specifically identified changes in the manner in which volume controls were to be applied.

The tide of increasing pressure on marketing order administrative committees to modify their mode of operation ebbed somewhat in late 1983 when Congress legislated away OMB's watchdog authority over marketing orders. But few would characterize the current calm as permanent -- marketing orders remain as antithetical to the Reagan administration's "free market" economic philosophy.

So what lies ahead? Clearly the authority to use marketing orders is not in jeopardy. Just as clearly, there will be continued pressure to ensure that marketing orders operate in such a way that the "public interest" is protected. While the public interest can only be subjectively defined, I think that some general statements can be made about which marketing order activities will be unchallenged during the next four years and which will be under intense pressure. I shall categorize these activities into two groups; what orders can effectively accomplish in the sense of achieving generally beneficial results from the standpoint of the public interest, and what orders cannot effectively do. Let me state clearly at the outset that this categorization is a distinctly personal one, but one buttressed by economic logic as well as real-life observations.

II. What Orders Can Do

Promote a Beneficial Quality Image

Numerous examples can be cited where order-imposed quality control along with order-financed promotion have resulted in consumers being

confident that they will consistently purchase a high quality produce item. Critics of marketing orders often charge that selling only high quality fruits and vegetables and promoting them as such makes good economic sense for individual growers and their marketing organizations, and that such merchandizing would occur with or without marketing orders in place. That is possible, but unlikely. Produce continues to be sold unbranded, and buyers continue to be very price sensitive in their purchases. Consequently, without mandatory order quality control, economic incentives exist for "pushing the market" with immature or substandard fruit.

However, caution must be observed in using marketing order quality control and promotion. For example, using orders to intensify regional competition at the expense of overall quality improvement benefits nobody but advertising agencies. Also, it is possible to go over the "quality edge;" closing out a profitable part of the market consisting of thrifty buyers who are willing to purchase produce in the lower quality ranges at a price that will still yield reasonable profits to growers. Order administrative committees might well consider directing research dollars into studies that attempt to determine grade-price relationships.

Some have argued that marketing order quality control represents a form of volume control -- restricting total sales by prohibiting the marketing of lower quality produce without regard to merchantability. Quality control measures have also been criticized for restricting imports. I see no convincing evidence that orders using quality control as their sole provision are often or consistently used as a form of volume control. Moreover, it is fairly easy for the Agricultural

Marketing Service to monitor the use of quality standard recommendations for evidence of such use.

Serve as an Income Safety Net

Firms such as General Motors, IBM, and U.S. Steel have a distinct advantage over farmers. If prices for automobiles, computers, or flat steel are too low because of excess supplies, the assembly lines can be shut down and inventories can be worked off until prices rise. When Mother Nature looks favorably on orange, cranberry, or peach producers, they are inclined to look askance at their good fortune. It is socially costly to subject farmers to the extreme price fluctuations associated with uncontrolled production. Where products are storable (e.g., tart cherries, cranberries), it makes good sense to both producers and consumers to use reserve pools. Where perishable commodities are involved, it makes little sense to push more produce on the market than consumers are willing to buy at prices that yield positive returns to growers.

While few would argue with the concept of using marketing orders as a safety net -- the Reagan Administration has urged the use of federal commodity programs in a safety net context -- some caution flags are apparent. Specifically, there is a problem in distinguishing between a temporary, externally-caused oversupply and a chronic surplus. Marketing orders can effectively deal with the former, but, as noted below, not the latter.

Promote Grower-Handler Cooperation

I think one of the most important and underrated functions of marketing orders is to provide a forum for handlers and growers to work out compatible solutions to general industry problems. This is not a

trivial benefit of marketing orders. Many "market facilitating" functions of marketing orders (packaging/pack requirements, promotion, research, and information dissemination) are analogous to trade association functions. In facilitating these functions, marketing orders are useful in formalizing grower-handler coordination that would be beneficial whether or not the order was in place.

III. What Orders Can't Do

Prevent or Eliminate Chronic Surpluses

While orders can be effectively employed to prevent prices from nosediving during short periods of overabundant supplies, they cannot effectively deal with chronic surpluses resulting from excess productive capacity. Quite the contrary, orders can stand in the way of necessary adjustments to excess capacity if increasingly large diversions to secondary markets are made in an attempt to prop price levels. The inability of marketing order supply controls to deal with chronic surpluses was clearly recognized and articulated many years ago by Sydney Hoos, an eminent student of marketing orders. Professor Hoos's advice against such use of marketing orders has, unfortunately, been ignored in some cases.

In their defense, however, I must add that marketing orders have often been falsely accused of creating surpluses. Initiation of an order employing secondary market diversion can cause an initial expansion in supply as production increases in response to associated higher producer returns. But an equilibrium will eventually be achieved at a somewhat higher price and larger supply than before the order was initiated. Subsequent changes in growing costs, investment incentives, or demand may well induce a further expansion of supply, along with

increasing diversion to secondary markets. It is inappropriate to blame the order for these "second round" effects.

Eliminate Individual Handler or Grower Economic Incentives

Marketing orders necessary involve growers and handlers relinquishing some decision-making authority to marketing order administrative committees. Given the voting procedures used in initiating, amending, and terminating marketing orders, a persuasive case can be built that decision making authority is willingly ceded, at least on the part of individual growers. But many bitter battles have been fought and continue to be fought over this question of individual rights vs. group consensus.

The point is this: Orders that consistently grant marketing rights (seasonal volume controls, intraseasonal prorates, and producer allotments) can substantially restrict individual decision-making. Certain producers and certain handlers gain at the expense of others. Competition among regions may also be affected. More specifically, federally-sanctioned granting of marketing rights tends to "lock in" the status quo as it pertains to competition among growers, among handlers, and among regions affected by the marketing order. The longer that competition is so restricted, the more distorted the structural configuration of growers, handlers, and producing regions relative to what would be observed in an unregulated environment.

One often hears the argument that an unregulated environment is equivalent to destructive competition -- without a marketing order certain individuals or firms would have an unfair competitive advantage because of cross-subsidization from unrelated enterprises, or because of tax shelter incentives, or, perhaps, because of fate. I think these

concerns are real, and need to be addressed on a case-by-case, or, at least, on a commodity-by-commodity basis. But, on the other hand, I do not think the consistent application of volume controls is a fair test of what is "appropriate" or "normal" competition.

Capitalism, as practiced in the U.S., depends heavily on market tests -- allowing competitors to decide who goes to the bank and who goes belly up. Marketing orders, and, more specifically, marketing order administrative committees, should permit market tests -- even encourage them. This means using volume control sparingly, and when used, used in such a way as to encourage healthy, innovative competition.

Summary

Fruit and vegetable marketing orders have, of late, been criticized for being anachronisms -- depression-born instruments of marketing control inappropriate for the twentieth century. I don't believe this to be the case. Orders have, for the most part, changed to conform with contemporary production and marketing conditions.

But that is not to say that all orders are operating wholly in the public interest, or that some administrative committees will not be legitimately under pressure to reexamine the manner in which controls are applied. Marketing orders can promote competition. They can also stifle competition. They are in jeopardy only if this distinction cannot be clearly made.

OUTLOOK '85

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MAJOR CONCERNS OF FAMILIES

The National Association of Extension Home Economists representing the 4000 Extension home economists employed by the USDA Cooperative Extension Service and State Land Grant Universities has completed a national study of public policy issues. The study was conducted to identify those issues of greatest concern to families.

The survey questionnaire consisted of two parts. First, Extension home economists were asked to rate, on a four-point scale and according to their observations, how concerned the majority of people in their counties were about each of 13 issues. The four-point rating scale, ranged from "extremely concerned" to "not at all concerned." Respondents were then asked to rank which three of the issues should be considered of highest priority.

The responses of 547 Extension home economists out of a random sampling of 856 names were tallied. (856 is approximately 25% of the members whose names were drawn from the membership list of the National Association of Extension Home Economists.)

The 13 public policy issues were selected on the basis of their timeliness and relevance to priority areas of Extension home economics programs. Because Extension home economists work with families at the grass roots level, their responses are significant.

The 13 issues included in the first part of the survey questionnaire were:

Fair insurance rates (such as age, sex, race);
Pay equity for women;
Medical costs;
Court-ordered child support enforcement;
Preschool care for children;
Before/after school care for school age children;
Care of the elderly;
Care of the handicapped;
Flextime and job-sharing opportunities;
Employment training opportunities;
Equal pensions for men and women;
Survivor's benefits for spouses;
Equity of social security for women.

The second part of the survey questionnaire was open-ended. It asked Extension home economists to list three family concerns or issues other than those already covered in Part 1.

PROFILE OF RESPONDENTS:

Here is a brief profile of the home economists participating in the survey:

TYPE OF COUNTY

58%	rural
17%	urban
5%	suburban
19%	mix of the above

AGE OF RESPONDENTS

21.6%	under 30
36.0%	31 to 40
22.3%	41 to 50
14.8%	51 to 60

More than half of the respondents (57.6%) were in the under 30 to 40 age group; 79.9% in the under 51 to 60 age group. The survey reflects the viewpoints of relatively young professional women.

MARITAL STATUS OF RESPONDNETS

63.3%	married
23.6%	single
8.0%	divorced
2.6%	widowed

The majority of the responding home economists answering the survey are, or were married.

The National Association of Extension Home Economists has four regional sub-groups. The Southern region, which has the greatest number of members also had the largest number of survey respondents, by far; 253 out of 547 (46.4%). The Central region accounted for the next largest group of respondents, 155 (28.3%). The Eastern region was represented in the survey by 71 respondents (13%). The Western region contributed the fewest respondents, 54 (9.9%). It is evident that the survey heavily represents Extension home economists working in Southern counties.

SURVEY RESULTS...PART 1

The leading public policy issue selected was medical costs. Meeting medical costs was ranked first by 36% of all respondents and identified as one of the three most important issues by a total of 61%. In fact, an overwhelming 96% said that people in their communities were "extremely concerned" or "very concerned" about rising medical costs. Communiities in the Central region were worried about medical costs the most with 40% of the respondents stating that this was the most important issue, compared to 28% of the Eastern region communities.

The second most important concern was pay equity for women, given top choice by 19% of the respondents and named among the three most important issues by 40%. Pay equity was of particular interest in the Southern and Western regions where 28% and 22% of the Extension professionals respectively stated that people in their communities were "extremely concerned" about this matter. The comparable figure was 14% for the Eastern and Central regions.

Two issues, virtually tied as the third ranked choice. The problem of preschool child care was cited by 31% of the respondents and care of the elderly was identified by 30%. Although Extension professionals in the Central region were somewhat less likely to feel that people in their

counties were "extremely concerned" about preschool child care, the difference among the regions were minimal, both in child care and in care of the elderly.

RESULTS OF OPEN-ENDED QUESTION...PART 2

To determine the issues not already covered, an open response question asked respondents to list three concerns of families which were now or could become problems in the future. A wide range of problems emerged, however, it is interesting to note that high unemployment and lack of jobs were mentioned by almost a fifth (19.4%) of all the respondents, and 44% of the respondents in Southern counties.

Difficulties in family relationships and parenting emerged as the second most frequently mentioned concern (15%), although if the whole array of problems which indicate stress on the family--divorce, teenage pregnancy, child abuse, alcohol and drug abuse--are aggregated, we find that family stability was listed among the current concerns 42% of the time.

Housing problems and the cost of housing were mentioned by 11% of the respondents, as the third most pressing issue. The region that gave this problem its top priortiy was the Eastern where almost one-quarter of the home economists (23.9%) who responded indicated they saw the high cost of housing and/or the need for low cost housing as a present and growing family concern in their counties.

Additional problems listed on the open-ended question were: high interest rates, unstable farm economy, decreased quality of education, crime/violence, water pollution and conservation, and personal money management/financial planning.

IMPLICATIONS OF THE SURVEY:

Of the 13 issues presented in the survey, the cost of medical care appears to be the top concern among American families. Concerns about pay equity for women, and care for dependent children and the elderly follow in order. Related to these issues are the "write-in" concerns... unemployment and the availability of jobs, parenting, family relationships, and housing...all interrelated issues pointing to the major changes taking place in the economic and family structure of society.

Most affected by rising medical costs would be the unemployed and those working in the low paying jobs where employers are less likely to offer extensive medical coverage, if any. Teenage mothers, single parents, the unemployed, self-employed, often carry no medical or hospital insurance because they can't afford to buy it. Medicare patients without supplemental insurance can be devastated by medical costs.

Economic factors also effect child care and the care of the elderly. Working mothers of preschool children still find it hard to pay for adequate care of their dependents. The frail elderly, often the responsibility of middle-aged children, can become an economic as well as emotional problem. Skilled nursing care in a nursing home for the elderly is very expensive and families are considering alternate care options where they are available.

The findings of this study identify many of the stressors placed upon American families. Addressing these issues found to major concerns of families is of vital importance to family stability.

ARMING THE MORTGAGE MARKET

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The Coming of ARMs

One of the most important factors in the recent housing recovery has been the introduction and widespread acceptance of adjustable rate mortgages (ARMs). Housing starts were over 1.7 million units in 1983 and will be in the 1.6 to 1.7 million unit range in 1984, a period in which the interest rates on 30-year fixed-rate level-payment mortgages (FRMs) were never below 12.5 percent and rarely below 13.5 percent. Historically, housing starts have been much lower when FRM rates were at such high levels (Figure 1). However, 1-year ARMs have been available during this time period at initial rates between 2 and 3 percentage points below FRM rates. The proportion of mortgage originations in the form of ARMs has been steadily rising over the last 2 years (Figure 2), surpassing 50 percent by the third quarter of 1984. The generally lower initial rates on ARMs have helped make housing more affordable, which has boosted activity in the housing market.

ARMs are a product of financial market deregulation. Starting in 1968 with the introduction of money market certificates of deposit, financial institution liabilities were gradually deregulated, culminating with the implementation of the Depository Institutions Deregulation and Control Act in 1982. Deregulation was undertaken in order to give savers market rates of return and to ease the housing cycles exacerbated by disintermediation. However, once financial institution liabilities were deregulated, it was necessary to deregulate asset powers, particularly for thrift institutions which are almost exclusively mortgage lenders. The most important new asset power for thrifts came in April 1981, when lenders received the authority to issue generally unrestricted ARMs. ARMs gave thrifts an interest sensitive asset for use in portfolio management, allowing them to better match the interest sensitivity of their cost-of-funds.

While some ARMs had been issued by state chartered thrift institutions before 1981, it was not until the end of 1983, when short-term interest rates had receded and FRM rates had risen above 13 percent, that the

volume of ARM originations skyrocketed. The interest rate environment has been an important factor in the recent success of ARM lending. ARMs were first introduced when interest rate conditions were not favorable to housing in general and ARMs in particular. The yield curve, which illustrates the relationship between short-term and long-term interest rates, was inverted for most of 1981 and 1982. ARM origination volume did not take off until the yield curve became substantially positively sloped, beginning in the middle of 1983. However, in the past few months it has flattened considerably. While statistics for the third and fourth quarters of 1984 are not yet available, preliminary indications are that ARMs as a portion of new originations have leveled off.

Aggressive pricing and marketing by thrift institutions has also been a factor in ARM success. The liquid condition of thrift institutions over the past two years and their desire to make their portfolios interest sensitive as quickly as possible has led to a great deal of experimentation with ARM designs and widespread use of initial adjustment period discounts, or teaser rates. Recently, there have been signs that the use of extremely low teaser rates is abating, due to the publicity generated over such rates and possibly because lenders have accomplished much of their portfolio restructuring goals.

Current Evidence on ARM Features

The introduction of ARMs into a highly competitive mortgage market has led to a great proliferation of ARM designs. While there has been some move towards standardization, there are still literally hundreds of different instruments available in many markets. Table 1 shows the incidence of different ARM features as reported in two recent surveys. The survey results indicate that the vast majority of ARMs have interest rate caps (most commonly 2 to 2½ percentage points per adjustment, 5 percentage points or more over the life of the loan) and annual rate adjustments. The use of various indexes (Treasury, cost-of-funds, or mortgage rates as given by the FHLBB contract rate) appears to be mixed. Other surveys by Freddie Mac and the National Council of Savings Institutions have indicated a greater proportion of ARMs with Treasury indexes and a lower proportion with cost-of-funds indexes than the U.S. League survey. This difference may reflect sample weighting or aggregation (i.e., the cost-of-funds incidence in the GEMIC survey refers only to the national cost-of-funds index, not FHLB district or internally generated indexes). Relative to past surveys, the use of negative amortization (deferred interest due to payment caps, graduated payment features, or payment adjustments less frequent than rate adjustments) has declined. Finally, the use of initial period discounts is widespread. The U.S. League reported 55 percent of lenders allow qualification at discounted rates. While the GEMIC survey reported only 27 percent of S&L's offering initially discounted rates, over 51 percent of large ($1 billion and over) S&L's as well as 49 percent of mortgage servicers offer discounts.

Implications for Borrowers

What do these features mean to borrowers? The vast proliferation of ARM designs and individual program complexity makes mortgage shopping a complicated and involved process. However, ARM complexity also allows loan programs to be tailored to individual needs. In addition, lower initial rates on ARMs allow borrowers to more easily qualify for mortgages for a given priced house or allow borrowers to obtain larger mortgages and purchase more expensive houses than possible with FRMs. For example, a borrower wishing to purchase a $100,000 house with a 90 percent loan-to-value ratio would need an income of $49,971 to qualify for an FRM at the current rate of 14 percent, assuming the normal qualification ratio of 28 percent mortgage payment-to-income and $100 monthly property taxes and insurance. The same house could be purchased by a borrower with an income of $43,971 if financed with a one year ARM at 12 percent. If the loan has an initial period discount of 2 percent and qualification is based on the discounted rate (as it is in the majority of discounted loans), a borrower would need an income of only $38,143 to qualify.

Essentially ARMs allow borrowers to avoid the tilt effect of fixed-rate mortgages. In offering long-term fixed-rate mortgages, lenders are subject to a great deal of interest rate risk. Partial compensation for this risk is incorporated into the FRM rate as an inflation premium, reflecting market expectations of future price increases. Lenders and investors also require compensation for the call provision of mortgages, which gives borrowers the right to repay the mortgages when they so desire. Borrowers will tend to hold their mortgages for a longer time (holding other factors constant) if the market rate is greater than their contract rate or prepay the loan if the market rate falls significantly below the contract rate. Because borrowers will exercise this option when it is to their advantage, and the lender's disadvantage, lenders will lose with either early or late prepayment. These two factors increase the rate on long-term mortgages which in turn makes it more difficult for borrowers with given income seeking to purchase a particular house to qualify for a mortgage. ARMs with relatively frequent rate adjustments require less compensation for expected inflation or prepayment risk and therefore will often be priced below FRMs.

While ARMs help borrowers qualify for mortgages, particularly when the yield curve is upward sloping, they entail more risk for borrowers than FRMs. There are two sources of risk with ARM designs. All ARMs involve the possibility of large payment changes, or payment shock, when the interest rate adjusts. The size of the potential payment change depends on a number of factors in addition to the underlying volatility of interest rates in the economy. The rate and payment change in the ARM will also depend on the index, presence of rate or payment caps, and whether there is an initial period discount. The likelihood of significant payment shock due to the ARM design has been lessened with the widespread adoption of interest rate and payment caps. Typically,

these caps limit the periodic rate change to 2 percentage points or less, or the payment change to 15 percent or less.

While these caps limit payment shock, they do not eliminate it. There is no experience upon which to judge whether annual payment changes of 15 percent (or a series of 15 percent annual increases) will induce mortgage delinquency and default. However, the ability of borrowers to handle such payment increases will depend on whether their income also grows while mortgage payments increase. For example, borrowers experiencing a 5 percentage point rate increase over 3 years (2-2-1) and 5 percent annual income growth would see their payment-to-income ratios rise from 28 to 32 percent. This increase is significant but not catastrophic. If there is no annual income increase, the payment-to-income ratio would rise to 36 percent. However, the combination of rising interest rates and no income growth is a rather unlikely prospect.

Perhaps a more significant problem is negative amortization. Deferred interest, when added to the principal balance of the loan, causes the loan balance to rise. If house prices do not rise at the same time the loan balance is increasing, the borrower's equity is reduced. Past studies of mortgage default have indicated that equity is the major factor in default, with properties with less equity being more likely to default. A particularly dangerous form of negative amortization occurs in the case of steep initial period discounts offered by builders. If the present value of the discount is added to the purchase price by the builder, the borrower's initial equity (downpayment) is immediately eroded without offering similar below-market financing as was involved in the initial purchase, the sales price may have to be lowered by the amount of the financing. In such cases, borrowers may find they have no real equity in the property and, therefore, a greater incentive to default.

The Future With ARMs

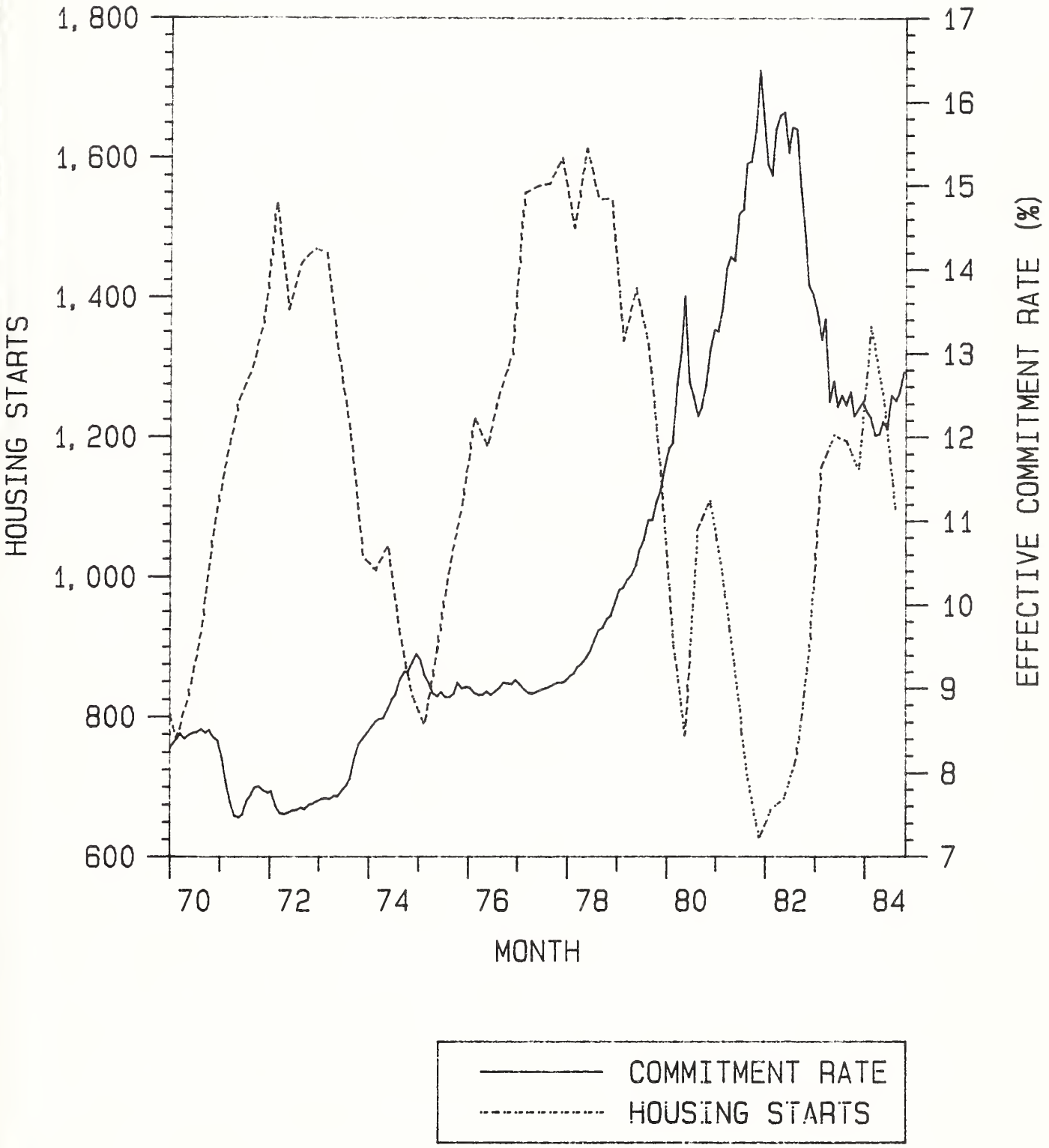
Will ARMs continue to be widely used in the future? The answer to this question depends in part on the future course of interest rates. If the yield curve flattens, the advantage of ARMs over FRMs is reduced and ARM origination volume would most likely fall. If the yield curve remains steeply sloped, ARMs will continue to be heavily used. Therefore, it is likely that the origination volume of ARMs relative to FRMs will be cyclical, rising as the yield curve gets steeper and falling as it flattens.

Standardization and disclosure will also be important to continued market acceptance of ARMs. Several organizations have recently published handbooks explaining ARM features, which will aid in consumer understanding. The Federal Reserve and the various financial institution regulators are currently working on uniform disclosure statements. Mortgage insurers have been tightening their requirements

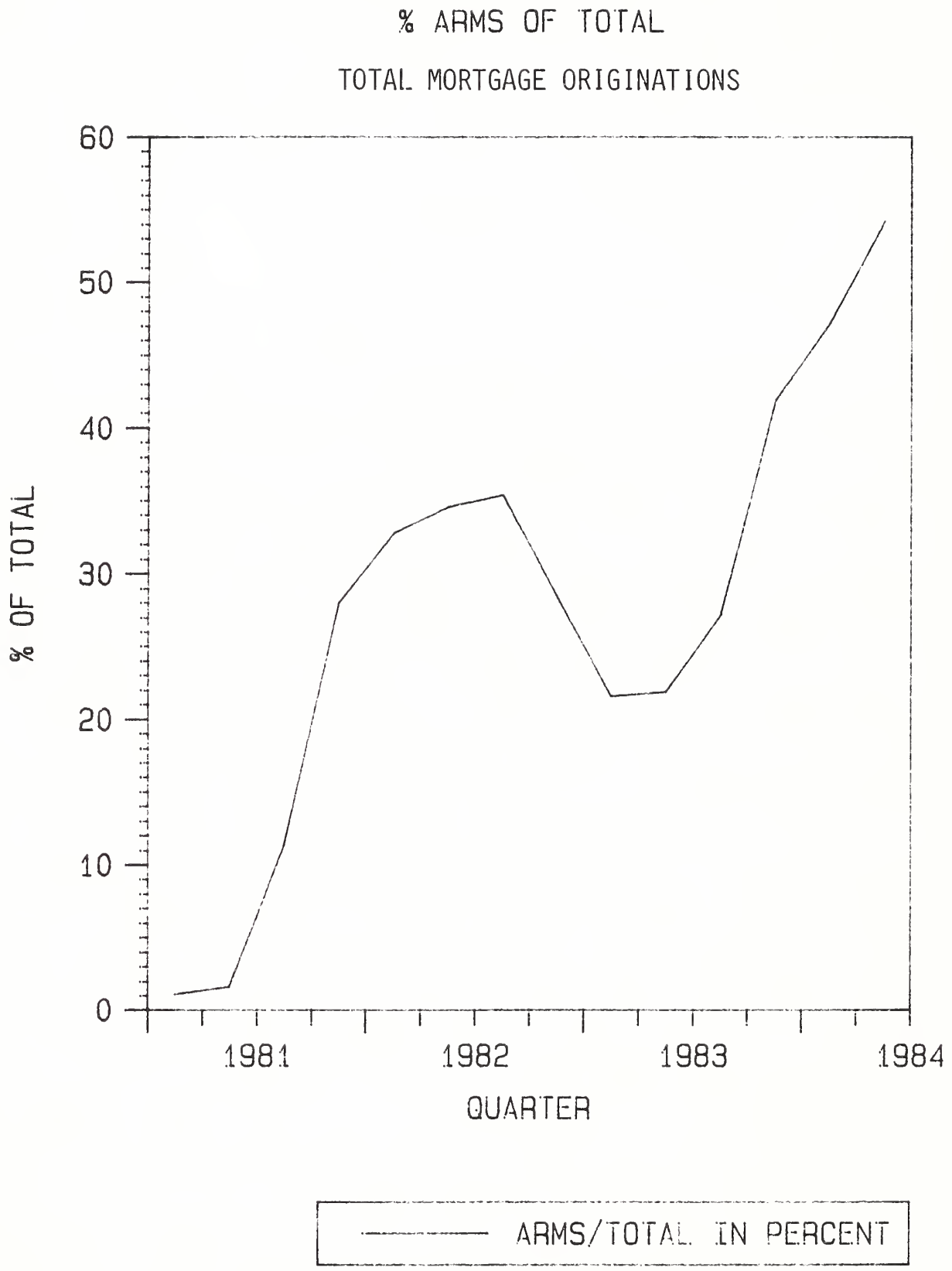
for mortgage insurance, which should eliminate some of the riskier ARM designs. Standardization of ARM features will make mortgage shopping easier and may spark non-thrift institution interest in ARMs, which can open the mortgage market to new sources of funds.

Finally, ARMs have some fascinating implications for the future course of monetary policy. As the proportion of U.S. homeowners with interest sensitive mortgages rises over time, interest rate fluctuations due to monetary policy actions will affect a group of consumers in a much more direct fashion than has been the case in the past with fixed-rate mortgages. While this factor may increase the interest sensitivity of consumption, and therefore, the potency of monetary policy, it may also increase the awareness of the American public to monetary policy actions. Thus, the Fed may feel more political pressure with regard to its policy with respect to interest rates. In any event, it is likely that ARMs will continue to change the nature of housing investment and consumption in the future.

SEASONALY ADJUSTED HOUSING STARTS AND
THE EFFECTIVE COMMITMENT RATE



Source: U.S. Department of Commerce, Federal Home Loan Bank Board



Source: Federal Home Loan Bank Board and U.S. Department of Housing and Urban Development.

TABLE 1
COMMON ARM FEATURES
(Percent of ARM Programs Having Specified Features)

		U.S.* LEAGUE	GEMIC** MORTGAGE SERVICERS	GEMIC** S&Ls
Index:	FHLBB Contract Rate	5.7%	3.1%	17.9%
	Treasury	43.4	93.7	59.8
	Cost of Funds	46.9	0	6.6
Rate Adjustment Period:	One Year or Less	94.0	87.3	78.9
	More Than One Year	6.0	12.7	21.1
Periodic Interest Rate Cap:	$< 1\frac{1}{2}\%$	N/A	5.6	11.6
	$\geq 1\frac{1}{2}\%$	N/A	73.3	61.5
	Total	70.3	78.9	73.1
Life-of-Loan Cap		93.5	85.1	75.4
Qualification at Discounted Rate		55.0	N/A	N/A
Initial Rate Discount		N/A	48.6	26.8
Negative Amortization		N/A	27.9	11.6

N/A - Not available

*"ARMs: A Study of Adjustable Rate Mortgages Being Made At Savings Institutions" United States Savings and Loan League, June 1984.

**Adjustable Type Mortgages, Survey Number 5, General Electric Mortgage Insurance Companies, August 1984 (results refereed to plan most commonly offered)

CLOTHING: THE PORTABLE ENVIRONMENT

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When most people hear the word, clothing, it is inevitable that they think of the fashion images with which the media bombards us every day. However, a great proportion of clothing worn by people all over the country today is worn not solely because of aesthetic or social reasons, but for physical ones. This clothing is worn for protection and safety. It is worn to improve people's health and well-being or to increase their capacity for work and enjoyment of leisure activities. It is this physical, protective aspect of clothing that leads me to define it as the "portable environment."

We exist in many environments and there are many levels at which protection can be achieved. Let's say, for example, that you owned a small company in the Arctic and you wanted an employee, a man, to be able to use tools and operate dials on equipment there, on a -30°F day. There are several ways you could help him accomplish his tasks. First, you could build a heated house or tent around him and the equipment so that he could work with bare hands. Second, you could change the equipment to be self-monitoring or design it to need less human control. For example, if a dial needed fine-tuning, it could be made to change in minute increments when you pressed on it so that the need for grasping could be eliminated. Third, you could create clothing that allowed the man to contact the equipment in a more effective way. He could wear a thin, electrically heated glove instead of the typically bulky Arctic mitten. A nonconductive knob could be built into his mitten so that he could grasp the knob from the inside of the mitten and plug it directly into a machine or directly into tools.

There may be situations where housing provides the best solution to a problem of personal protection and others where modification of equipment works best. However, I think that clothing holds tremendous possibilities for solving many of these types of problems, for several reasons. First of all, it is a "quick fix." That is, it is relatively inexpensive and quick to provide clothing rather than to build a house or make a modification in equipment. Let me give you some examples. I'll begin with a humorous one. There has been a lot in the news recently about snoring and some surgical and other medical procedures



Fig. 1. Apron for emergency evaculation of an infant nursery. (Design: Vera Leonard)

designed to cure it. Years ago, someone patented something called "anti-snore" pajamas. These were pajamas with a hard rubber ball sewn in the center back between the shoulder blades. When the snorer attempted to turn on his or her back, the rubber ball made the position too uncomfortable, so he or she returned again to another position -- one less likely to result in snoring! This garment provided a quick, simple, inexpensive solution to the problem.

Several years ago, a nurse in a maternity ward became concerned about how infants could be evacuated from a hospital in case of a fire. Her solution was not an expensive, elaborate vehicle, but a simple evacuation apron with baby-sized pockets so that each nurse could carry six infants to safety. (See Fig. 1)

As this last example illustrates, the money-saving aspects of a clothing solution to a problem can be significant. One field in which a clothing solution has saved billions of dollars is the microchip industry. When you or I walk across a carpeted floor, touch a metal object and get a shock, it is merely uncomfortable. When a worker in the microchip industry builds up a static charge on clothing or the body -- even one that does not result in a spark that can be seen or felt -- that worker's contact with a microchip may result in its contents being erased. Industry often attempts to control static by humidifying the environment or "grounding" as many factors in the environment as possible. One method that has been used to solve the problem is to place a conductive strap around each worker's wrist and essentially "chain" them to an electrically grounded work station. As you can imagine, this is not a very popular solution! Recently, materials have been developed that contain a small percentage of stainless steel (less than 2%). Red Kap Industries has developed a lab coat of a polyester/cotton/stainless steel material. Workers wearing this coat sit on a grounded chair at a grounded table. Electrical charges travel along the stainless steel filaments in the coat, so that they are dispersed over the whole surface of the garment and exit into the room rather than collecting in one surge to the hands when the worker touches a chip. This simple, inexpensive clothing item has solved a billion dollar problem.

Another reason why clothing is tremendously successful at solving problems of personal protection is that it stays with the body. The mobility that apparel gives you grants you a freedom to do things that would otherwise not be possible. The recent capturing of satellites by the Shuttle astronauts is the best example of this very special attribute of clothing that I can think of. There are many things you can accomplish in a hazardous environment, whether it be outer space, under the sea or on earth, that simply can't be accomplished as well by instrumentation or remote control. Butchers who want to be able to work directly with meat, rather that lose it to the recesses of a machine, wear gloves made of stainless steel mesh to protect their hands from sharp knives. This same steel mesh is used in suits that protect deep sea divers from shark attacks. These shark suits allow a mobility and freedom for exploration underwater that simply cannot be achieved a cage or an underwater craft. Entry suits for firefighters have a similar advantage. They allow firefighters access to areas of the blaze that could not be approached in any other way. Garments for workers who spray pesticides protect the workers while allowing them to move close to foliage and achieve their purpose more completely than would be possible with machinery. (See Fig. 2.)

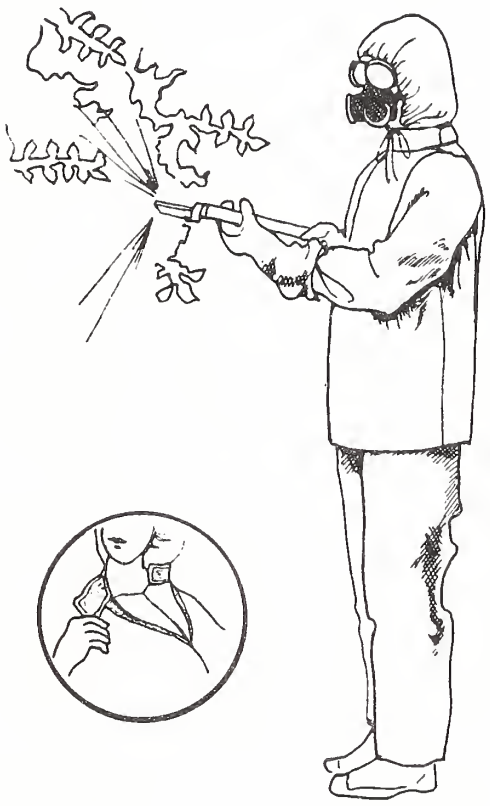


Fig. 2. Protective garment for pesticide spraying. (Design: Ellen Conti)

While mobility is of great importance, perhaps the reason why I feel that clothing is most important to personal protection is that it allows you to take maximum personal control over your life. It is not possible to change the environment in a way that makes everyone happy or indeed, is in everyone's best interest. Even something as simple as the temperature of an office is often a point of contention among workers. Clothing allows each individual to encase himself or herself in a personal, portable environment that establishes the kind of mini-world in which they want to live. So, you dress to stay warm if your office-mates prefer a cooler office or you wear rubber gloves when you work with potentially harmful household chemicals. This idea of personal control becomes even more critical when the environment seemingly moves more and more out of our control. The news is filled with conflicting articles about acid rain, nuclear waste, unsafe practices with pesticides and pollution--all of which leave us as

consumers uncertain of our personal safety. We've already seen the emergence of clothing items that protect us from hazards that were barely acknowledged years ago. The X-ray apron that you wear at the dentist provides one example of this. (See Fig. 3) Hospital gowns and masks that you wear visiting someone in quarantine are another.

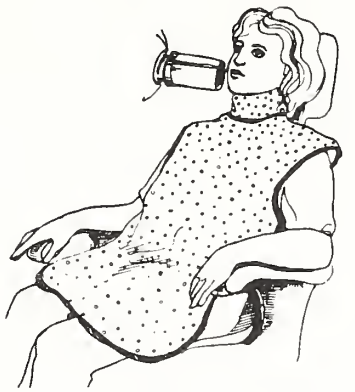


Fig. 3. Leaded bib for a dental x-ray patient. (Design: Shielding, Inc.)



Fig. 4. A protective suit for "David," a child born with no natural immunities. (Design: NASA)

This decade has seen the emergence of many clothing designs that increase individuals' personal control over the environment. The mock space suit worn by David, the boy with no functioning immune system, is an excellent example. (See Fig. 4) This garment allowed David to leave his hospital "bubble" and enter a world that was normal for us, but potentially deadly for him. Functional accessories such as jewelry can also add this factor of personal control. One designer has created lifesaving jewelry. One of her necklaces monitors air quality and contains an oxygen mask that is released automatically when pollution or the pollen count becomes too high. (See Fig. 5) An asthmatic or highly allergic person would then have a five minute supply of oxygen which would allow them time to move to a safe area such as an air-conditioned building or car. This designer has also created a bracelet that monitors the pulse rate.

Another designer has suggested a smoker's hat. This is my favorite kind of functional clothing because other people wear garments that protect you. The smoker's hat contains a tiny motorized filter, much like those in some current "clean air" ashtrays, underneath its brim. Smoke is drawn into the filter as it leaves the smoker's mouth, and released out the top of the hat as cleaned, filtered air.

These items illustrate the potential for clothing and accessories to function to help the individual achieve maximum personal control over the environment. Yet, while I feel that that these portable environments we call clothing hold the key to personal protection, I would not want to leave you with the impression that clothing stands apart

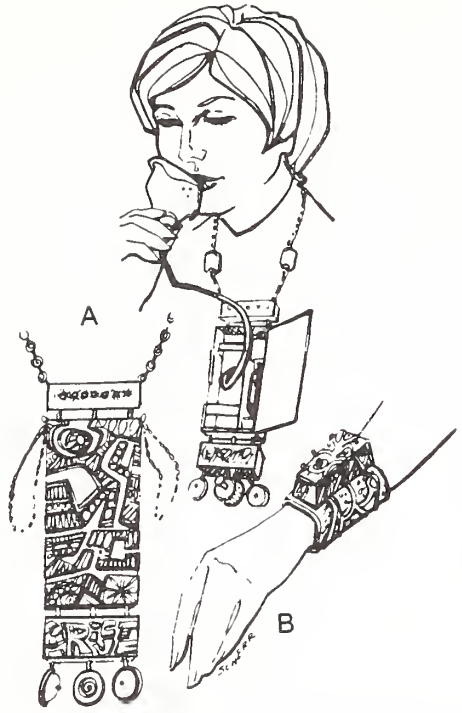


Fig. 5. Lifesaving jewelry. A: a necklace that monitors air quality and releases an oxygen mask when needed. B: a bracelet that monitors the pulse. (Design: Mary Ann Scherr)



from housing or other products in its attempts to protect the individual. Indeed, many of the most successful examples of personal protection can be found in solutions that combine all three approaches -- using housing, interior equipment and clothing to protect an individual. You have probably seen movies in which people who work with radioactive materials reach through rubber gloves that are a part of the wall of a chamber in which the hazardous materials are placed. A number of hospitals contain whole rooms that are sealed off in this manner to isolate immune-deficient patients such as those with leukemia. (See Fig. 6) Food, bedding and other goods are passed through sterilizing chambers on the wall of the unit. Hospital personnel put on vinyl garments, sometimes called "tunnel suits," that are actually part of a flexible wall of the room. These garments contain hook-ups for stethoscopes and other monitoring devices. A doctor, nurse or orderly can walk into the room and move around it, fully treating a patient or making up a bed, etc., without risking the patient's exposure to any non-sterile particles. In this design, the room, equipment and clothing all function together to solve a very complex problem of human protection.

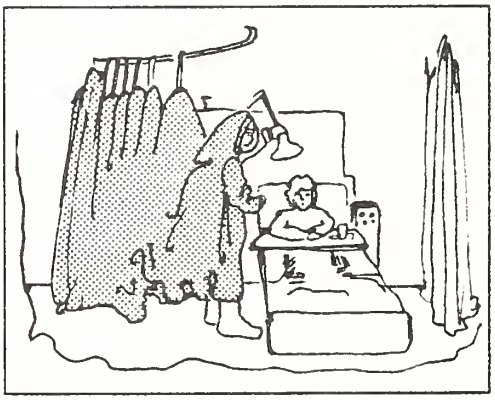


Fig. 6. A "tunnel suit" used in a germ-free isolation ward. (Design: AMSCO American Sterilizer)

A recent design competition sponsored by the University of Tennessee provides an illustration of the integration of housing, interior design, furniture, and clothing to solve thermal comfort problems related to solar housing. Two Cornell students submitted designs which extended furniture into body wraps and converted bedding, already warmed by the body at night, into dressing gowns for cold winter mornings. Open storage boxes recessed on the inside of the solar collection wall warmed garments and slippers that could be put on a person as he or she entered the house. Aluminized fabric screens were used to direct heat flow in the room or focus collected heat on the next day's clothing while the occupants of the house slept.

Although in both the hospital isolation ward and the solar house, all of the factors are interrelated, it is clothing that provides the greatest source of personal protection and personal control. It is clothing that makes the design solutions work.



Fig. 7. The Kindergaard®, a lifepreserver for infants. (Design: Stearns Manufacturing Company)

Advances in technology have made possible clothing for almost every imaginable occupation or recreational activity. Athletes are protected from injury by increasingly sophisticated sports equipment. A lot of the knowledge formerly used to protect the body after injury is now being used to prevent injury from occurring. Children have been the focus of considerable development in clothing and equipment for a wide variety of sports and recreational activities. For example, special life preservers have been developed for young children who may not swim, or who may panic in a boating accident. These safety devices have a large amount of flotation material just below the chin so that the face is always kept out of water regardless of the thrashing of the arms and legs as the child moves. (See Fig. 7)

Learn-to-swim bathing suits have also been created. One, for a little girl, contains a series of styrofoam wings which, when all are used together, allow a child to float. As a child gains confidence in the water and takes on a bit more flotation herself, individual floats are removed from the suit one at a time, until they are no longer needed. This type of design is a great improvement over the old sink-or-swim, inner tube approach to the problem.



Fig. 8. A police officer's bulletproof vest.

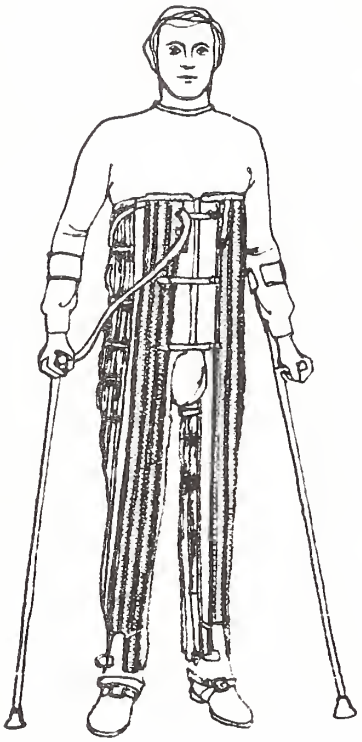


Fig. 9. The Orthowalk®, a pneumatic, all-fabric support for paraplegics. (Design: ILC Dover)

There are countless other illustrations in the adult world as well. Policemen are now protected by bulletproof underwear. (See Fig. 8) Firefighters wear high visibility garments made of Nomex® or other aramid fibers that not only provide flame resistance but prevent heat from being conducted to the skin surface. This same heat-resistent fabric is used to increase the safety of race car drivers. In the past, the fire retardant cotton used in racing coveralls provided only about 2½ seconds of protection from the high temperature flames that resulted from the fuels used in racing. When aramid fibers such as Nomex® began to be used in racing garments, the driver's time of protection (from the time the flame contacted the garment to the time the skin blistered) was lengthened to about 20 seconds. When designers began to experiment with these fabrics, even more protection time was provided. For example, one Nomex suit was fitted on its innermost layer with fine tubing. When a crash occurred, a driver could activate a foam-producing mechanism in the suit, and a stable heat-resistant foam flowed out of the tubing, filling the space between the skin and the garment. This foam remained stable for five minutes, greatly increasing the time the driver was protected.

The medical field is full of examples of the effects of advanced technology. There are inflatable, all-fabric orthotic (support) devices. One is shaped like a pair of pants but contains thin tubing extending down the length of the legs. (See Fig. 9) The tubing is inflated until it is rigid as a steel brace. This device allows a patient's limbs to be straightened as they would be with metal braces, but without the weight of metal or the stress that metal parts place on regular clothing.



Fig. 10. Feeding vest for a patient who has no stomach. (Design: Dr. Stanley J. Dudrick, 1979, "Vest for Ambulatory Patients Receiving Hyperalimentation, based on illustrations in Surgery, Gynecology and Obstetrics 148:588)

Another medically related item is a vest that has been developed for a boy who has no stomach. (See Fig. 10) The bags of food he needs to survive are kept in pockets on the vest and propelled by a tiny pump into a tube that leads into the body. With this garment, the boy is free to move around. Without it, he would be tied to hospital equipment. Knee braces, pressure garments for burn victims and anti-embolism stockings are only a few of the many clothing items designed to help increase the well-being of thousands of people.

There is no doubt that technological advances will continue in the coming decade. My feeling is that we will see more and more of a new type of protective clothing -- the kind that, like the automobile air bag, eliminates the need for a wearer to "buckle up" or make any response at all to danger. The best example of this type of clothing that I can think of is a new type of logger's pants recently brought to this country by a company named Swedfor®. Current loggers' pants are generally bulky, quilted garments that are intended to give the logger a short margin of safety, generally less than a few seconds, to get out of the way of a chain saw. The new Swedfor® pants contain a multiple layered liner made of a fabric that actually prevents a chain saw from functioning. When a chain saw hits the liner fabric, strong threads are pulled out and tangle in the chain saw mechanism causing its motor to shut off. Thus, the wearer is protected even if unconscious or pinned under a tree. I think we will see many more examples of this kind of self-sufficient protective clothing in the near future.

One of my Cornell colleagues, Gary Sloan, is involved with office design. He says that the office of the future should not just be <u>designed</u> intelligently, it should <u>BE</u> intelligent. As we talked about clothing, it became clear to me that this was an apt description of clothing of the future too. It is conceivable that in the not-too-distant future we may wear garments that react to changes in posture, tension in muscles and other potential long range health hazards. These garments may automatically massage a tense muscle, prod the body into a correct posture, provide a burst of heat in areas where it's needed or stimulate the flow of blood to a specific body part. They may sense

hazards such as pollution or electrical charges in the air and emit compensating factors to form an intimate, personal, protective environment around each individual body.

There are already complex mechanical devices that allow a paralyzed limb to function essentially normally. I think we will see the development of garments that accomplish this same function while maintaining a normal, fashionable outward appearance. It is conceivable that clothing could be developed that would lock your body in a safe position when you are in a car crash or when you fall while skiing. We may, in the future, be wearing garments that are joined with biological seams that grow together again if they split, and expand or contract with weight gain or loss. My friend, Joann Boles, who teaches apparel design at the Virginia Polytechnic Institute, says that we may be choosing designs from an array of styles displayed on computers, pouring vials of material into their own personal body molds, putting the molds in our microwaves while we take showers, and stepping into newly-formed garment each morning. We may be warmed by garment made of heat-storing fibers and cooled by garments made of heat-absorbing ones. The groundwork for many of these developments is being laid right now.

To me, the most exciting part of the future of functional clothing is that many of these items will not just be for exotic environments like outer space or under the sea, but will be for a wide range of common occupations and leisure activities that will touch the lives of every household. They will increase the likelihood of having whole, healthy family members and will increase our capacities for enjoying full lives.

Figures are taken from Clothing: The Portable Environment by Susan M. Watkins, published by the Iowa State University Press, Ames, Iowa, 1984.

WORLD OILSEEDS OUTLOOK

OUTLOOK '85

Richard T. McDonnell
Foreign Agricultural Service, USDA

1985 Agricultural Outlook Conference, Session #23
Washington, D.C.

For Release: Wednesday, December 5, 1984

In recent Outlook talks, it has been the practice of the FAS speaker to present USDA's estimates of world oilseed production, consumption and trade, and outline the rationale behind our numbers. I'd like to depart from this practice today and instead spend some time discussing trends of the recent past, because I think they hold some clues to the future outlook for our oilseed and product exports. What I'm talking about is import growth, where it's occurring now, and where it's likely to occur in the coming years. I'll be confining most of my comments to soybeans and products--because of limited time and because of the importance of soybeans to the entire oilseed complex.

(Slide #1). This graph divides the world into six importing regions, and two time periods. During the first 4-year period (1974/75-1978/79), soybean imports by all six regions were expanding. EC imports grew by nearly one million tons each year, USSR and Eastern Europe by 1/2 million tons annually, and the other areas (Japan, Other West Europe, selected developing countries and "others") grew by between 200-400,000 tons a year.

The second period (1979/80-1983/84) shows a totally different story. Only two areas - Japan and the group identified as "selected developing countries" (Mexico, Taiwan, South Korea, Indonesia, Malaysia and Venezuela) - showed significant growth in imports during 1979/80-1983/84. In only one region, the selected developing countries, did imports grow faster during the second 4-year time period than during the first. What's noteworthy here is that these six developing countries actually stepped up imports during a period when the world was experiencing an economic recession, a deterioration of the global debt crisis, and of course the rapid rise in the value of the U.S. dollar--all factors that tend to limit import growth. During this period EC soybean imports actually declined by an average of more than 800,000 tons per year, other West Europe imports stagnated, and imports by the USSR/Eastern Europe fell by 150,000 tons annually. Meanwhile, imports by the selected developing countries grew by 450,000 tons annually.

(Slide #2). This graph is organized the same as the first and shows a similar trend. For this graph, the category "selected developing countries" consists of 8 countries: Venezuela, Egypt, Iran, Philippines, Indonesia, Algeria, Thailand, and Iraq. Soybean meal imports by these countries grew by nearly 300,000 tons annually during

1979/80-1983/84, almost double the amount of import growth during 1974/75-1978/79. Imports by all other areas either grew at a slower rate, or in the case of the USSR and Eastern Europe, declined. Imports by the EC, by far the world's largest soybean meal importer, continued to grow during 1979/80-1983/84, but by less than half the rate of growth in 1974/75-1978/79. Note that imports by the EC, 10 developed countries, grew by nearly 400,000 per year during 1979/80-1983/84 and the rate of growth appears to be slowing; imports by the 8 developing countries grew by nearly 300,000 tons annually during the same period and appear to be expanding.

(Slide #3). This chart in effect combines the information in the first two graphs and puts it into soybean meal equivalent. Here, however, we've simply divided the world into 3 categories: developed countries, developing countries, and countries with planned economies. This chart shows that the trend outlined in the first two graphs is not limited to just the selected developing countries. The developing country share of world soybean and soybean meal imports (in soybean meal equivalent) has grown since 1974/75; the developed countries share has declined; and the planned economies' share is essentially unchanged.

(Slide #4). This graph shows the growth rates of the world's fastest growing (in terms of tonnage) vegetable oil importers. I have used only one time period (1976/77-1983/84) because the kind of distinct shift noted in the previous graph is not evident in world oil markets. The world's fastest growing vegetable oil importers have been developing and planned economy countries since the early/mid 1970's. (I am excluding EC countries in this analysis because most of the growth there has been in intra-EC vegetable oil trade.) The world's fastest growing oil market during this period was the USSR (whose imports grew by 82,000 tons annually); not far behind are India and Pakistan (about 60,000 tons annual growth); and then Nigeria and Turkey (approximately 25,000 tons). These five countries alone accounted for 40 percent of the growth in world vegetable oil trade during the period 1976/77 - 1983/84. In two of these countries -- the USSR and Nigeria -- soybean oil represented only a relatively small amount of the total growth in oil imports. In the other 3 countries, soybean oil accounted for 50 percent or more of the total oil import growth.

Looking at just soybean oil imports, five countries - India, Pakistan, Iran, Morocco and Turkey - accounted for more than half (55%) of total world import growth during 1976/77-1983/84.

The point of all this is not that our "traditional" markets are no longer important. The European Community still takes about one-third of U.S. soybean exports and 40 percent of our soybean meal exports. Western Europe will remain important soybean and soybean product markets for the United States. But I wouldn't characterize these as "growth markets." The common theme of the graphs is that developing countries in recent years have been, for the most part, the fastest

growing soybean and product markets. I for one do not think this is an aberration. In 1974/75, Mexico, Taiwan, South Korea, Venezuela, Indonesia and Malaysia imported 1.1 million tons of soybeans; by 1983/84, that amount had nearly quadrupled. That kind of growth probably cannot be sustained in the next 10 years, but per capita consumption of meal and oil in these countries is far from saturation levels.

Developing countries, as a category, are growing markets now. Planned economies (or Communist Bloc countries) are the other area of considerable potential import growth. But political considerations and economic woes are restraining imports. As we've seen, the USSR is already a rapidly growing oil market and has been an in-and-out soybean/soybean meal growth market. Imports by Eastern Europe have declined in the past few years, but the potential for a substantial increase in imports by this region exists. When that potential demand translates into larger imports will depend largely on the timing of an economic recovery and an improvement in the region's debt position. The enormous potential of the Chinese market has been often discussed. China is now a net exporter of soybeans and soybean meal. How long this will last is an open question. But it's unlikely that Chinese oilseed production will grow as fast in the next 5 years as it has in the last five years. And if the Chinese leadership decides to develop a modern livestock industry or increase per capita vegetable oil consumption, that country could soon be an oilseed and/or oilseed product importer.

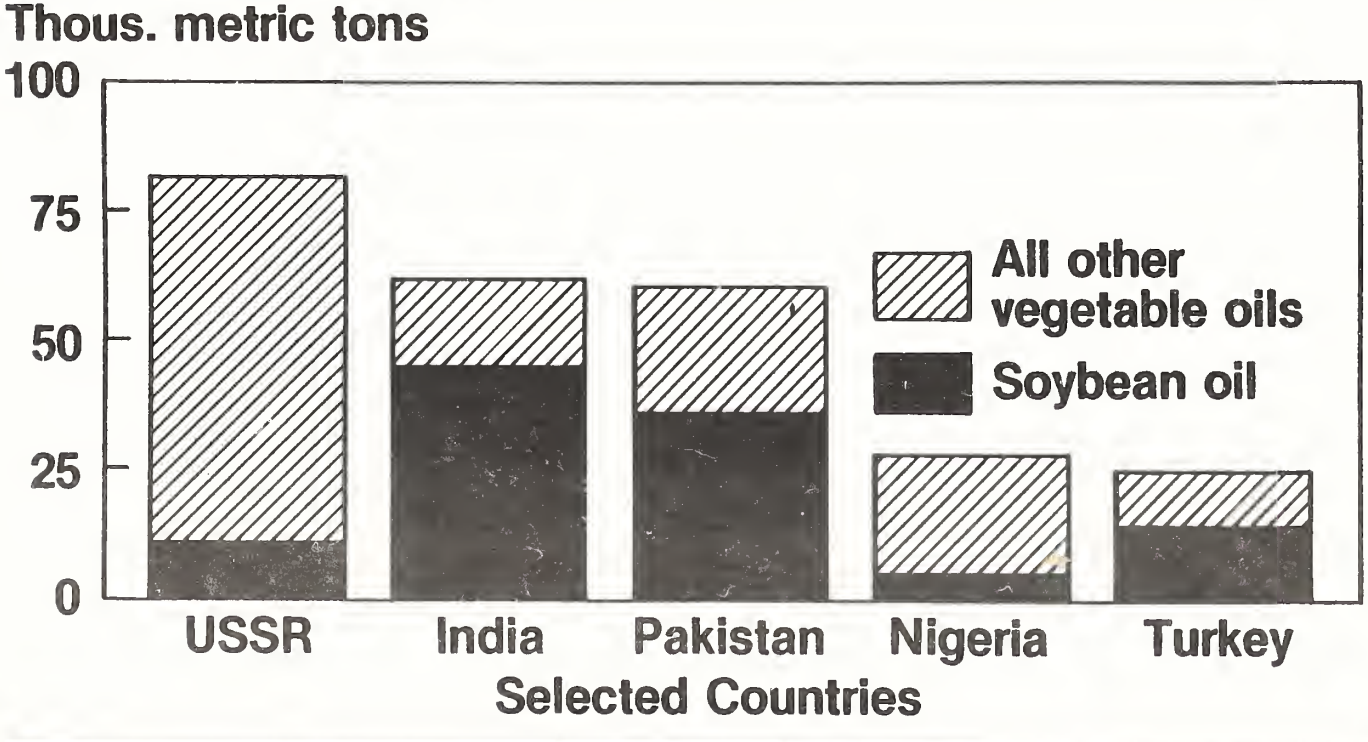
The growing significance of the newly-emerging markets has obvious implications for those of us concerned with commodity analysis. During the latter part of the 1970's and early 1980's, the EC took 45 percent of U.S. soybean exports; that meant if you had a pretty good idea of European demand, you were well on your way to making an accurate U.S. export estimate. As I mentioned earlier, the EC last year accounted for one-third of U.S. bean exports. Last year, the six selected developing countries shown in the first graph alone took nearly 20 percent of our soybean exports.

Many developing countries (and all planned economies) share two common characteristics that complicate commodity analysis work. Major commodities such as soybeans tend to be closely controlled by (if not the outright monopoly of) the government. And governments are often not as market responsive as private importers. Second, our information on end use of oilseed products is not as good as in developed markets. A good example of what I'm talking about is the EC and Mexico. Last year, we had some high soybean prices (especially in the first part of the season). We expected that the high prices would ration exports to the EC and also to Mexico whose economy had been faltering and whose foreign exchange problems are well known. EC soybean imports fell, but Mexico's increased from 1.1 to 1.4 million tons. We're still hard pressed to explain that kind of increase. Similarly, in 1982/83 the USSR imported about 2.8 million tons of

soybean meal - a big increase over 1981/82. Most analysts (including those of us in USDA) were forecasting Soviet 1983/84 meal imports at 3 million tons or more. But someone in Moscow had a different idea, and actual imports, were about 600,000 tons. I've heard a number of explanations for why this occurred, but that kind of dramatic turnaround almost defies logic.

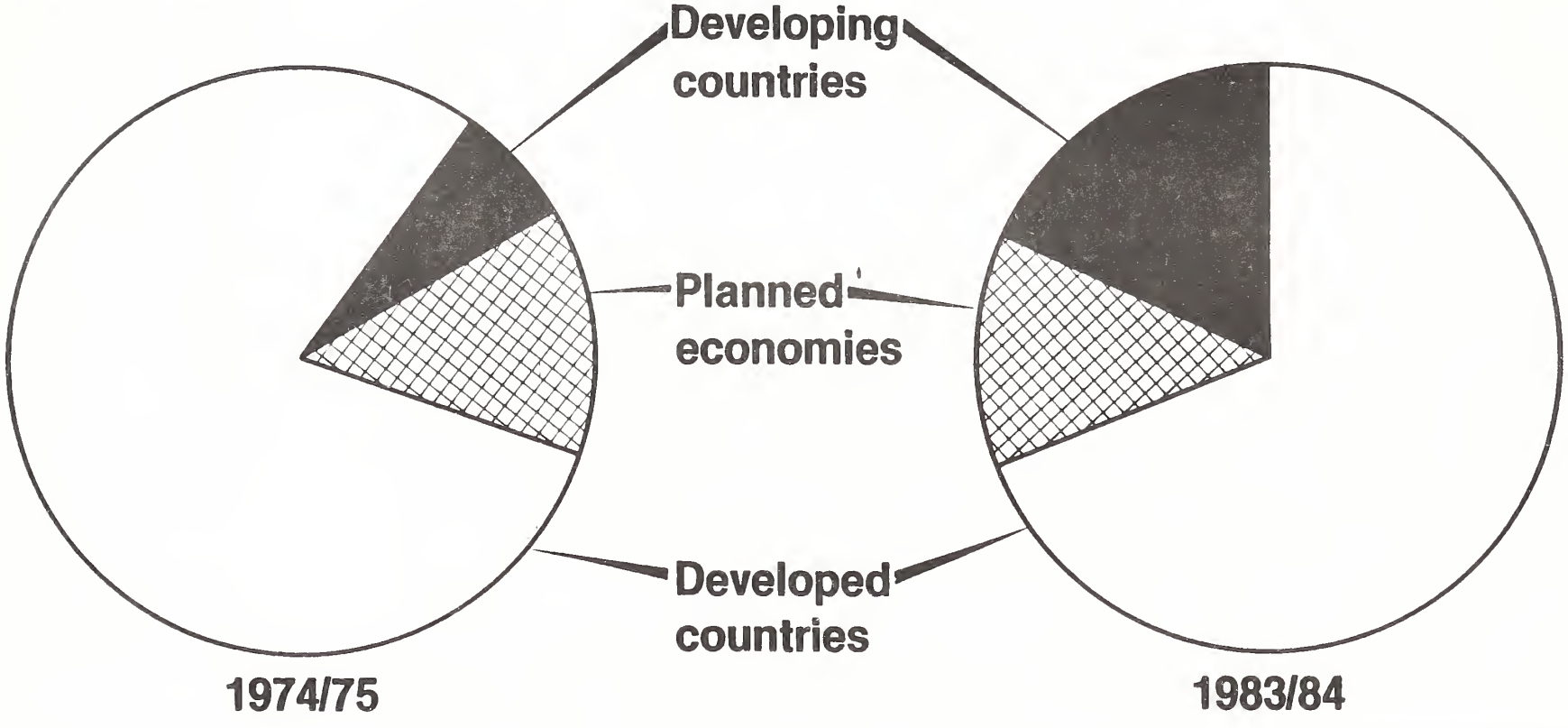
I offer these ideas not as an excuse for not being able to do a better job in estimating U.S. exports. But I do think it's fair to say that the job of analyzing foreign demand is harder today than it was 5-10 years ago. For those of us in the business of commodity analysis, it makes for more challenging and interesting work.

Vegetable Oil Imports Annual Growth Rates 1976/77 - 1983/84

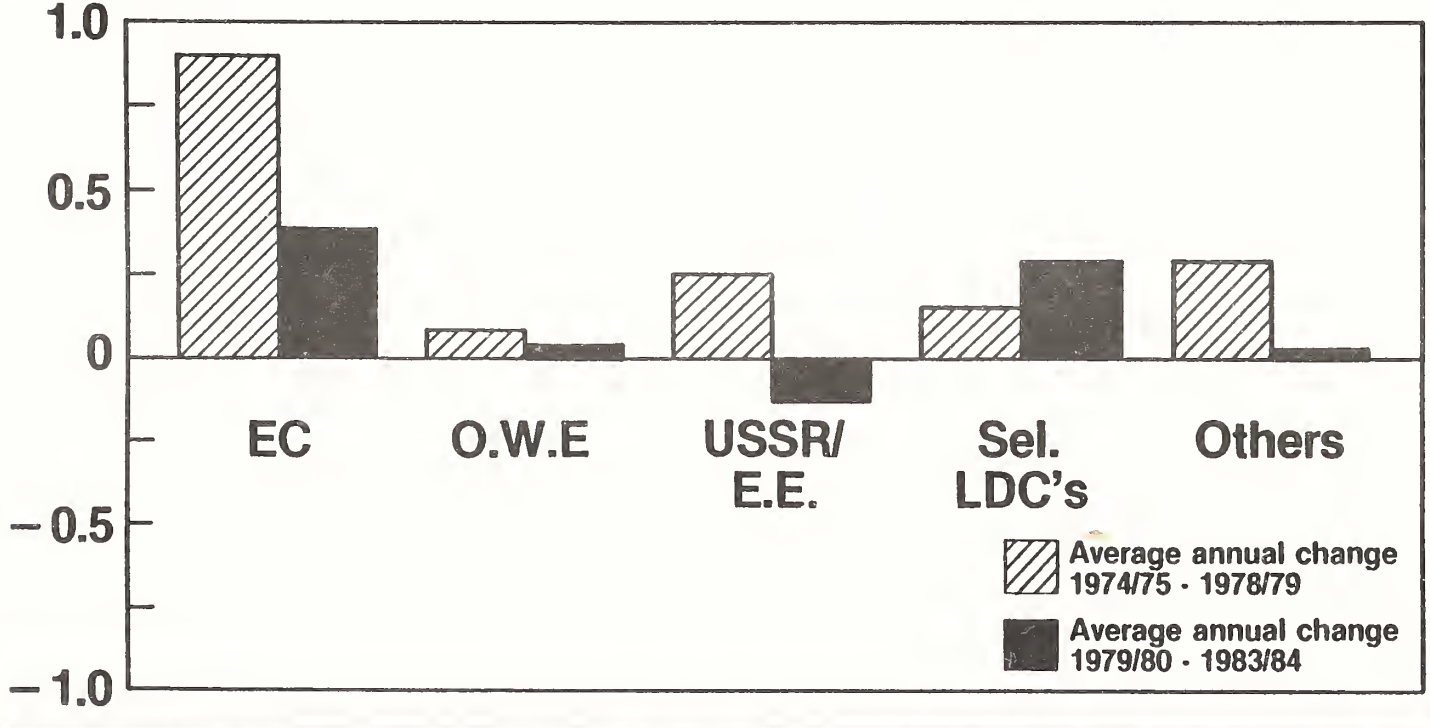


World Imports of Soybeans (SME) and Soybean Meal

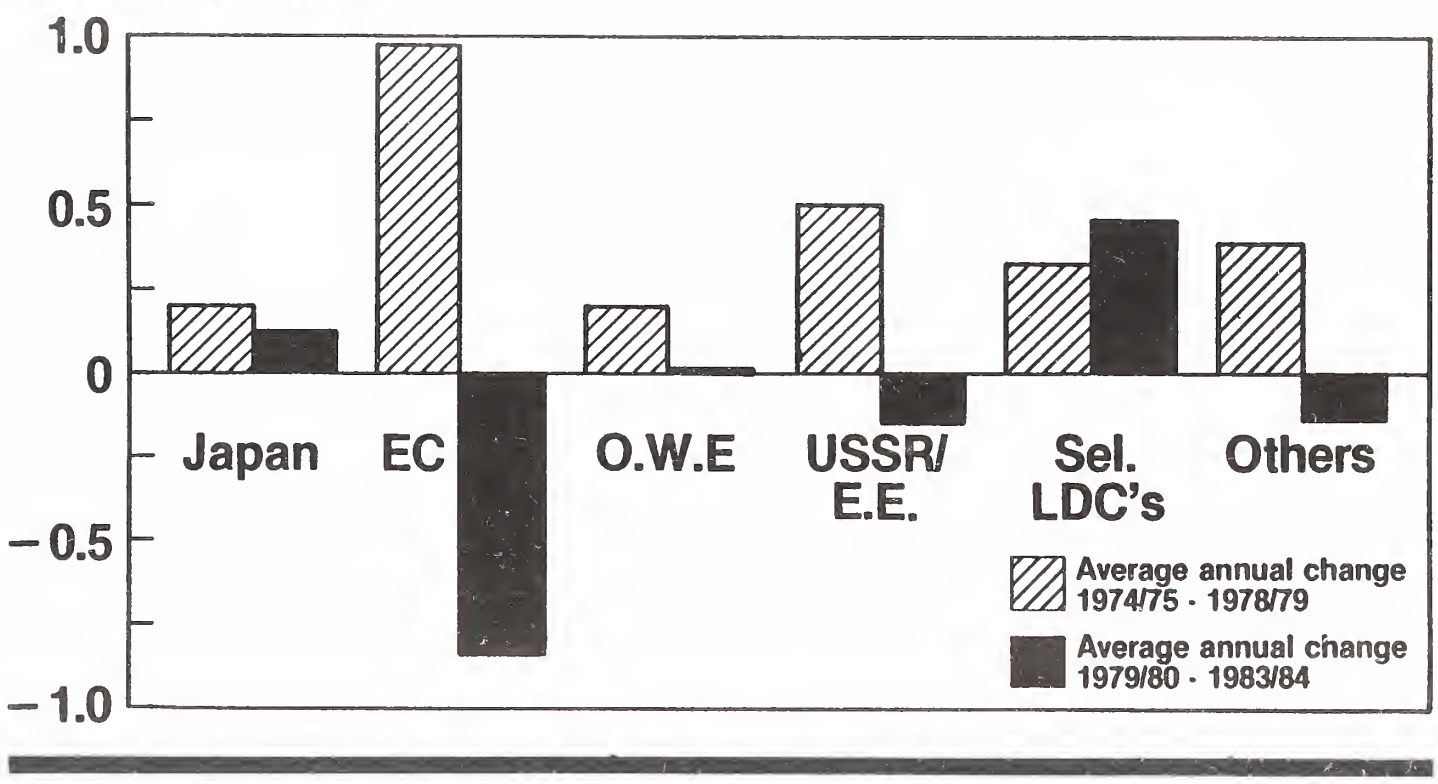
(in percent)



Soybean Meal Imports Annual Growth Rates



Soybean Imports Annual Growth Rates



Soybean Trade

	1983/84 Preliminary	1984/85 Estimated
	Million metric tons	
Exports		
World	26.1	26.7
U.S.	20.1	21.5
South America	5.1	4.2
Imports		
EC	9.5	10.0
Other W. Europe	4.0	4.0
Japan	4.7	4.8
USSR & E. Europe	1.8	1.9
Selected LDC's*	4.2	4.4

*Mexico, South Korea, Taiwan, Indonesia, Malaysia, and Venezuela.
Oilseeds and Products Division
Foreign Agricultural Service
November 1984

Soybean Meal Trade

	1983/84 Preliminary	1984/85 Estimated
	Million metric tons	
Exports		
World*	17.7	18.9
U.S.	4.9	5.1
Brazil & Argentina	9.8	10.5
Imports		
EC*	8.3	8.5
Other W. Europe	1.1	1.0
USSR & E. Europe	3.6	4.8
Selected LDC's**	2.2	2.5

*Excluding EC intra-trade.
**Venezuela, Egypt, Iran, Philippines, Indonesia, Algeria, Thailand, and Iraq.
Oilseeds and Products Division
Foreign Agricultural Service
November 1984

Soybean Oil Trade

	1983/84 Preliminary	1984/85 Estimated
	Thousand metric tons	
Exports		
World*	3,181	3,127
U.S.	823	680
EC*	334	366
Brazil & Argentina	1,362	1,450
Spain & Portugal	550	520
Imports		
India	750	600
Pakistan	350	330
ME/N. Africa	698	800
Latin America	566	585
Eastern Europe	108	158

*Excluding EC intra-trade.
Oilseeds and Products Division
Foreign Agricultural Service
November 1984

U.S. Production and Exports

	1983/84	1984/85
	Thousand metric tons	
Sunflowerseed (Sept.-Aug.)		
Production	1,451	1,664
Exports	1,057	1,000
EC	375	
Mexico	458	
Portugal	160	
Sunflowerseed oil (Oct.-Sept.)		
Production	204	228
Exports	188	170
Egypt	55	
Venezuela	51	
Cottonseed oil (Oct.-Sept.)		
Production	352	552
Exports	137	256
Egypt	31	
Venezuela	55	
Peanuts (Aug.-July)		
Production (in-shell)	1,495	1,998
Exports (shelled)	253	306
EC	137	
Canada	64	
Japan	26	

Oilseeds and Products Division
Foreign Agricultural Service
November 1984

DOMESTIC SOYBEAN OUTLOOK

Roger Hoskin, Economic Research Service, USDA

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Washington, D.C.

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OUTLOOK '85

Prompted by higher soybean prices in 1984/85, soybean acreage rebounded in 1984 to 68.3 million acres. Yields recovered from 1983's drought-reduced levels to 28.5 bushels per acre. Although an improvement, this yield is below trend. An exceptionally wet autumn throughout most of the soybean producing regions of the Mid-west and Delta states contributed to declines in 1984 production. Production in 1984 is estimated at 1,902 million bushels, a decline from 2,028 million bushels estimated in September.

The crush industry will likely find little relief from capacity problems in the 1-billion-bushel crush projected for 1984/85. The "crush for oil" that was in evidence last spring will likely persist in 1984/85. Figure 1 presents the percent of the cash value of the crush contributed by soybean meal and soybean oil. Historically, the break has been 65 percent of total value was contributed by meal and 35 percent by oil. In 1982/83 the meal contribution was slightly above average. This was the period of soybean oil surplus and 19-cent-a-pound oil. In 1983/84 the short crop shifted the balance sharply to oil. Based on a five year average, soybean oil has contributed about 34 percent of the crush value, the remainder contributed by soybean meal. During 1983/84's short-crop, soybean oil's contribution averaged 43 percent. Based on an early November average of cash prices for soybeans, meal, and oil, soybean oil's portion of crush value was 48-percent. However, spreads based on November prices of future contracts were lower, falling to 39 percent based on July futures.

Prospects for soybean oil demand will likely maintain an above-average crush value contribution from oil into 1984/85. However, the crush for oil as it existed in 1983/84 should largely dissipate. The price spreads, the spread between the value of products and the soybean prices, reflect a decline in crushing for oil.

Soybean ending stocks are expected to total 200 million bushels in 1984/85. Although a rise over in 1983/84's ending stocks, ending stocks would total 10.7 percent of projected use, a modest rise from 9.7 percent in 1983/84. Although the stocks-to-use ratio for soybeans will likely

not change substantially this year over last, the price drop is expected because season average price for corn is forecast to decline from $3.20 a bushel in 1983/84 to the $2.65-$2.95 range in 1984/85.

Although soybean oil prices will remain above those of recent years, it is slack soybean meal demand that is limiting crush and price performance. Soybean meal domestic dissappearance is forecast to reach 18.3 million tons in 1984/85. This represents a 4-percent improvement over 1983/84 but is not sufficient to overcome slack in soybean meal exports. Those exports are projected at 5.6 million tons, only 164,000 tons over 1983/84. At 5.6 million tons, exports would be the second lowest since 1976.

For domestic livestock producers 1984/85 offers the prospect of relatively cheap feeds. However, except for broiler producers, profits have been nonexistent. Continued high slaughter rates have inhibited prices for finished cattle and hogs. The prolonged liquidation is probably somewhat explained by continued financial stress of many livestock producers. Continued pressure to raise more cash to pay debt and a consequent poor working capital position have prevented low feed prices from having their usual expansionary affect. Expansion will likely come but could be delayed into next year.

Although total high-protein animal units (HPAU) will decline slightly from 1983/84, soybean meal use per HPAU will rise, but not sufficiently to offset last year's 11.4-percent decline. The change in all protein feed per HPAU (figure 3), gives some indication of substitute protein use as well as the mix of livestock being fed. For example, the percent decline in soybean meal fed in 1983/84 was greater than that for all protein fed, suggesting more widespread use of alternatives. Higher levels of wheat feeding in the Southwest, gluten feeds and manufactured feeds from animal by-products could account for the difference. In 1984/85, cheap soybean meal should encourage increased feeding rates, but available substitutes could limit soybean meal from regaining markets against alternatives. The bottom line for improved soybean meal prices is re-expansion in hog feeding and cattle feeding in the upper mid-west where the soybean meal/corn ration is more widely used. Soybean meal prices are expected to average $155 a ton for the 1984/85 season.

Slack demand for soybean meal puts pressure on the soybean oil market. Soybean oil prices are more price inelastic than soybean meal prices. Consequently, declines in soybean meal demand and lower soybean meal prices depress crush margins, limit crush, and hence oil production, which is expected to rise a scant 2.6 percent from 1983/84's drought reduced level. Domestic oil disappearance is forecast to reach 9.75 billion pounds in 1984/85. The impact of demand inelasticity is illustrated in figure 4. During 1982/83, a year of relative sufficiency, low prices stimulated little increase in consumption; but in 1983/84, a year of extreme drought, nearly a 50 percent rise in prices reduced domestic consumption a modest 2.5 percent. In 1984/85, soybean oil production will be higher than in 1983/84, but supplies will be tigher

because of lower beginning stocks. Some price rationing of demand will likely be necessary. Producers of substitute oils could find 1984/85 a good marketing year. Soybean oil prices will likely average 29 cents a pound in 1984/85.

Prices for soybeans in 1984/85 should resume their customary pattern, that is, relatively low near harvest then rising throughout the season. Figure 5 suggests that the short crop price pattern still exists for soybean oil. November prices for futures contracts indicate soybean oil in future months is discounted to cash prices. This is the reverse of the norm; prices usually rise the further out the delivery month within a season. Strong early season export demand is lifting current prices. This pattern suggests that price rationing in soybean oil could persist in 1984/85.

For soybean meal the opposite is the case. Current cash prices are quite low, but future prices rise sharply into next spring. The price rises are probably more than sufficient to cover storage and capital costs and indicate a strong perference to store meal for future consumption. The market is likely signaling stronger soybean meal demand next spring and summer in response to rising animal numbers then.

The fundamentals for other U.S. oil crops are similar to those for soybeans. Cottonseed production rebounded to 5.3 million tons in 1984/85. Crush could be sharply higher at 3.8 million. Likewise with sunflowerseed, production increased to 1.83 million tons, although this production is lower than early season projections. Supplies for sunflowerseed are not appreciably higher than last year because of lower beginning stocks.

One advantage to cottonseed and sunflowers is that the oil for both is a larger percentage of the crush and is more valuable relative to their meals. Thus, strong oil prices should be of benefit since meal value is not as important to crush value for cottonseed and sunflower seed as it is to soybeans.

Overall the major forces, outside of higher world oilseed production, affecting the U.S. oilseeds complex are macroeconomic. High interest rates and a strong trade-weighted dollar are limiting exports. The recent declines in interest rates could reduce U.S./foreign exchange rates and help exports. Furthermore, interest rate declines could help debt-burdened livestock producers and encourage expansion.

Soybean acreage in 1985 will probably not change much from 1984 acreage. During the spring of 1984, the soybean/corn price ratio stood about 2.4:1. A 2.4 ratio would not indicate a major shift in resources from one crop to the other. Based on March futures, the 1985

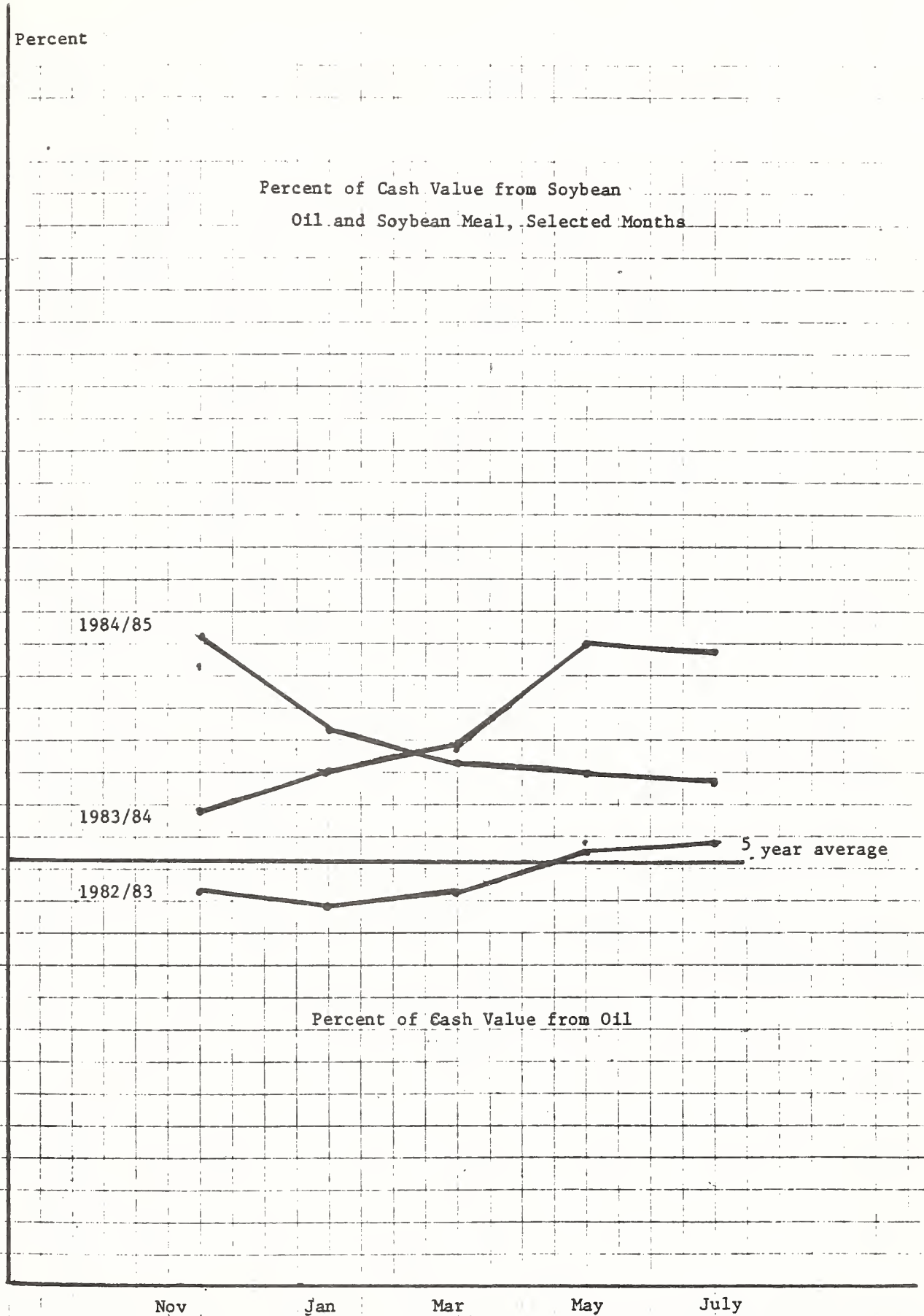
soybean/corn price ratio would be about 2.25:1. If this ratio is realized, a slight shift to corn acreage would be indicated. However, high participation in the feed grains program would limit the acreage that could be shifted.

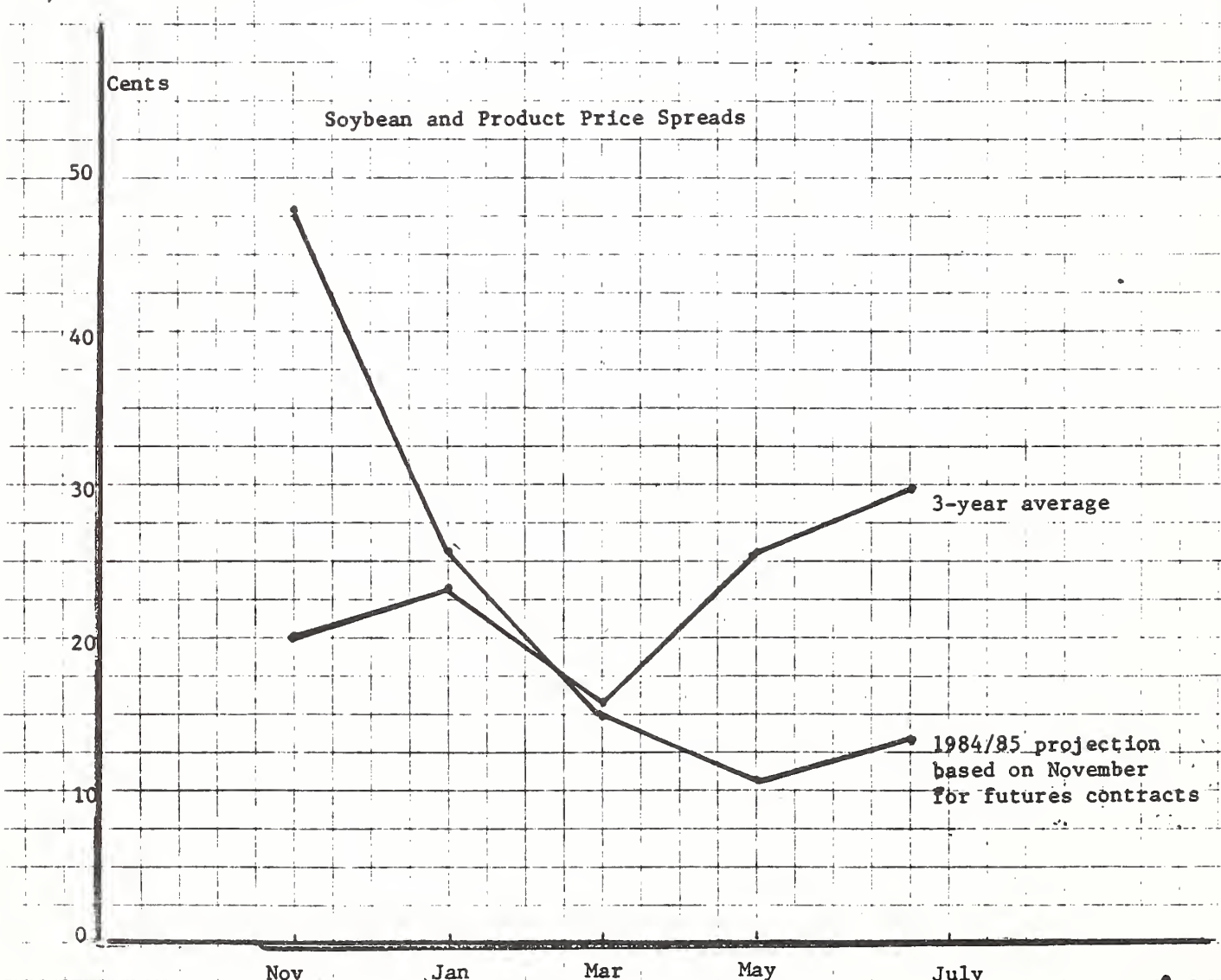
At planting time in 1983, soybean prices were low relative to corn and there was evidence farmers under-planted their corn bases in 1982. This allowed farmers to comply with PIK while raising corn plantings relative to soybeans. This is not the situation in 1985. Participation in the program will likely have the affect of allowing soybean prices to decline relative to corn but limiting the shift in acreage.

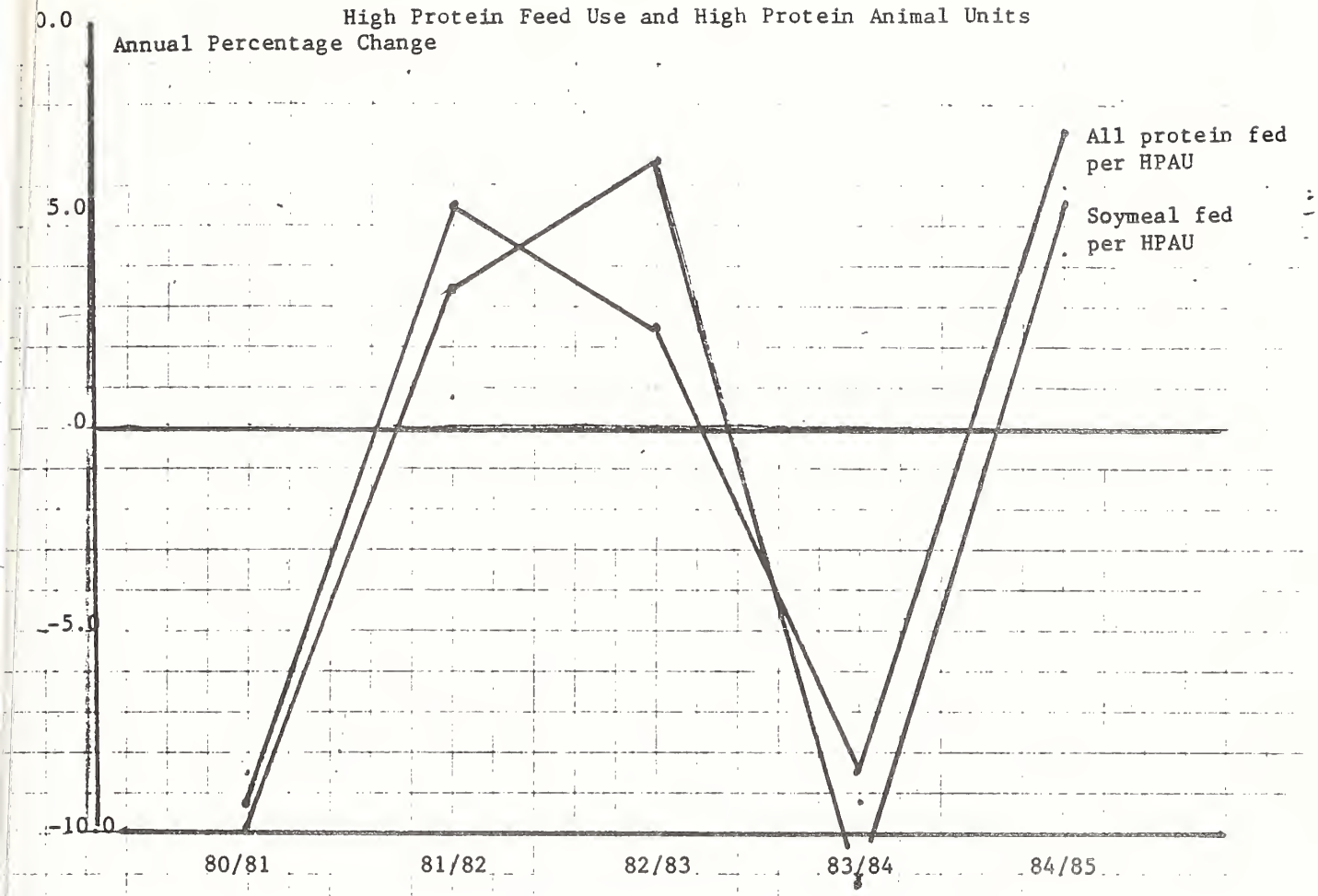
In the South, double-cropped acreage did not rise appreciably in 1984 from 1983, contrary to expectations. A permanent shift in acreage from soybeans to sorghum, or a shift to two-year rotations which include soybeans in alternate years appears underway. The change in farming practice is likely a response to disease and drought problems encountered by these farmers in recent years.

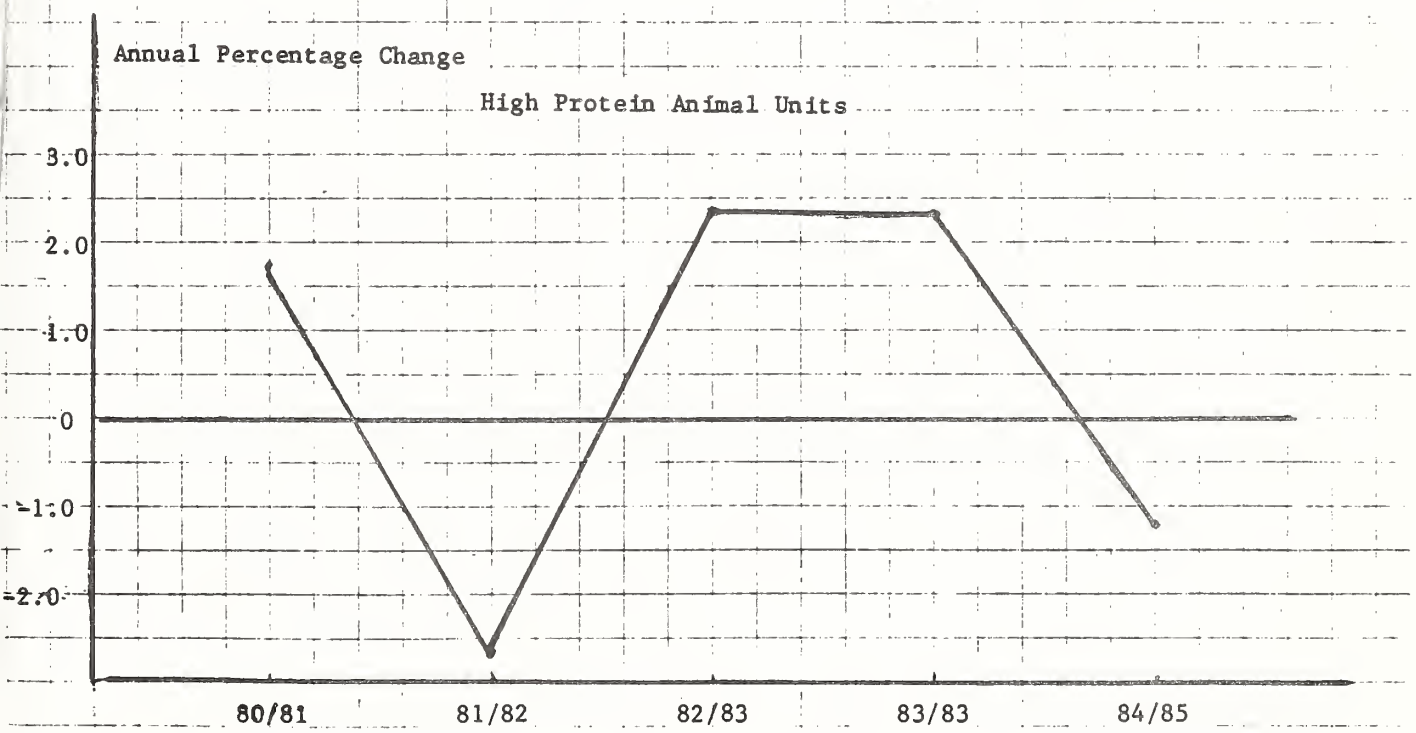
Soybean acreage in 1985 will likely range between 67 to 70 million acres. Of more significance is potential yields. The United States has experienced 2 years of sub-trend yields. Figure 6 illustrates hypothetical but plausible U.S. production alternatives under three acreage alternaties: 67.0, 68.5 and 70.0 million acres; and three yield alternatives: low, 25.5 bushels per acre, trend, 30.7 bushels and high 31.7 bushels. The low and high were actual U.S. yields obtained in recent years, 1983 was dismissed as an unlikely reoccurrence.

What figure 6 illustrates is that yield outcomes have a much more significant impact on production outcomes than small acreage changes. If 1984 yields are repeated in 1985, then regardless whether acreage is 67 million or 70 million, production will likely be about the same as this year's. However, if yields return to trend, production would exceed 2 billion bushels under all three acreage scenarios. If 1982 yields were repeated, production approaches 95 percent of record production on just 67 million acres.

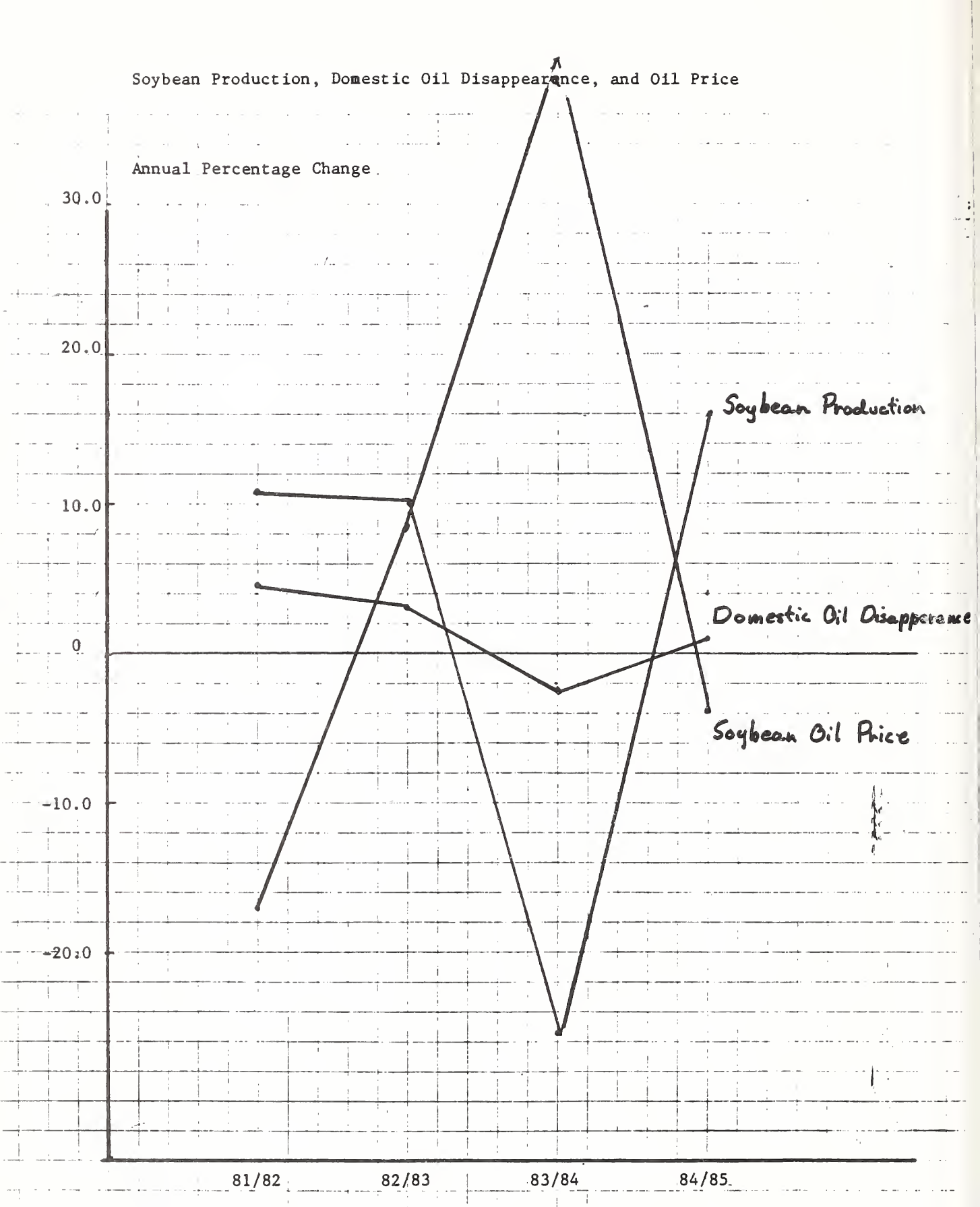

Percent
90
80
70
60
50
40
30
20
10
0
Percent of Cash Value from Soybean Oil and Soybean Meal, Selected Months
1984/85
1983/84
5 year average
1982/83
Percent of Cash Value from Oil
Nov
Jan
Mar
May
July


Cents
Soybean and Product Price Spreads
50
40
30
20
10
0
3-year average
1984/85 projection based on November for futures contracts
Nov
Jan
Mar
May
July

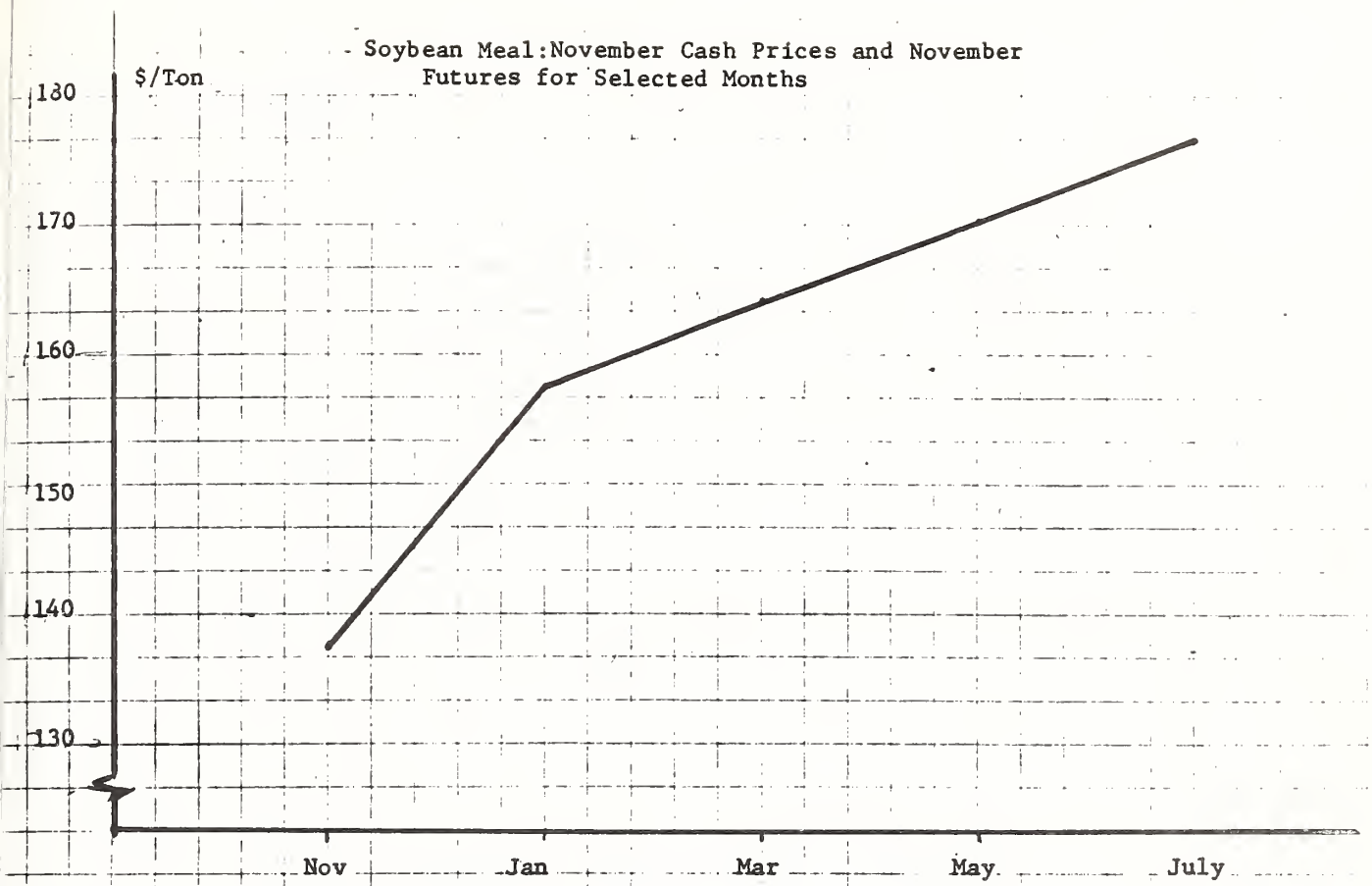

High Protein Feed Use and High Protein Animal Units
Annual Percentage Change
0.0
5.0
0
-5.0
-10.0
All protein fed per HPAU
Soymeal fed per HPAU
80/81
81/82
82/83
83/84
84/85


Annual Percentage Change
High Protein Animal Units
3.0
2.0
1.0
0
-1.0
-2.0
80/81
81/82
82/83
83/83
84/85

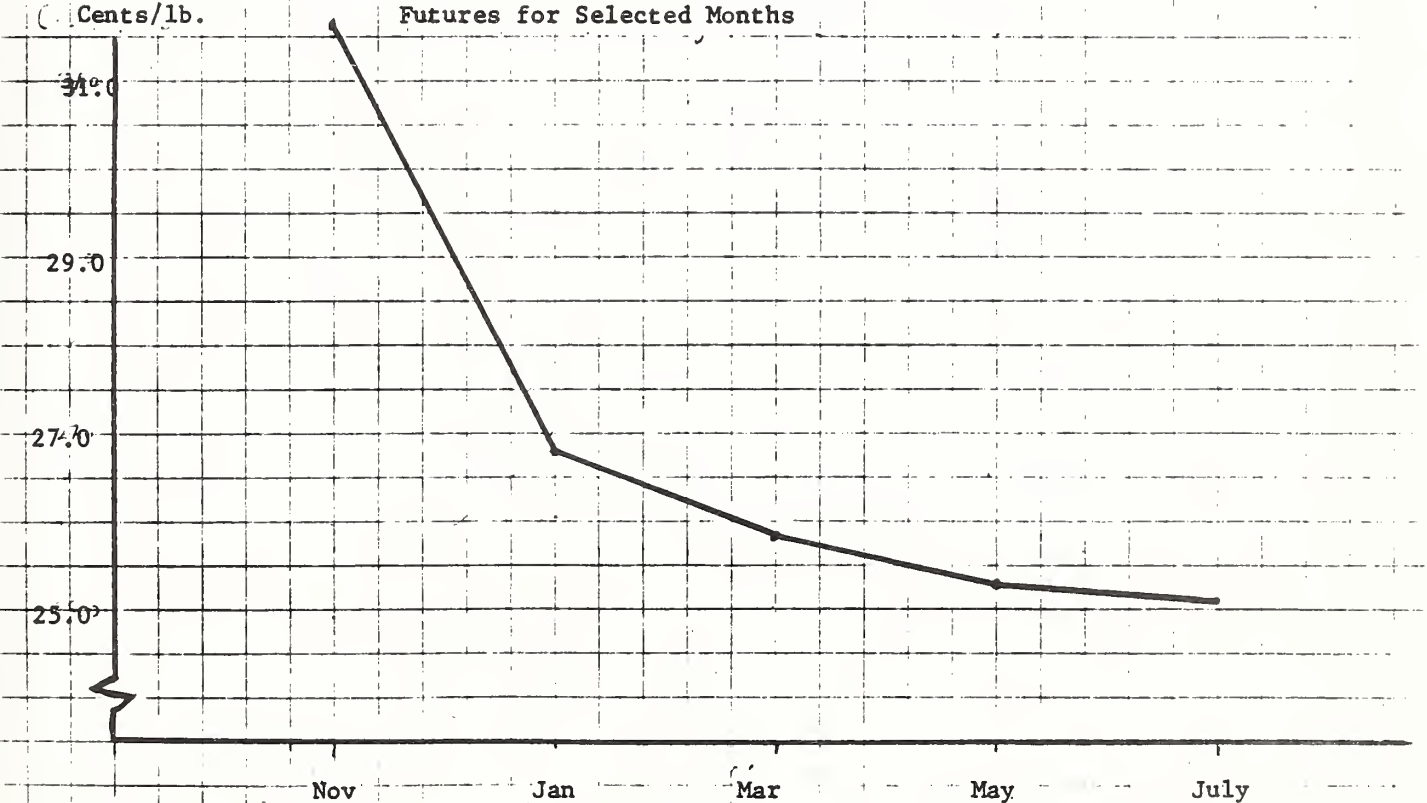
3


Soybean Production, Domestic Oil Disappearance, and Oil Price
Annual Percentage Change
30.0
20.0
10.0
0
-10.0
-20.0
Soybean Production
Domestic Oil Disappearance
Soybean Oil Price
81/82
82/83
83/84
84/85

Soybean Meal: November Cash Prices and November Futures for Selected Months



Soybean Oil: November Cash Prices and November Futures for Selected Months



1985 U.S. SOYBEAN PRODUCTION ALTERNATIVES

YIELD	ASSUMED ACREAGE PLANTED (ASSUMED ACREAGE HARVESTED)		
	67.0 (65.7)	68.5 (67.2)	70.0 (68.7)
LOW (28.5 BU./A 1983/84)	1870	1915	1960
TREND (30.7 BU./A)	2017	2063	2110
HIGH (31.5 BU./A 1982/83)	2070	2115	2165

MILLION BUSHELS

WORLD OUTLOOK FOR SUGAR

John L. Nuttall
Chief, Sugar Group, FAS/USDA

Annual Agricultural Outlook Conference
Session #24, Washington, D.C.

For Release: (Wednesday), December 5, 1984

INTRODUCTION

I appreciate the opportunity to be with you today to discuss the world sugar situation and outlook. Detailed information on the current situation is available in the FAS circular released in November. In addition, we have just completed the process of updating and revising historical statistics on world sugar supply and distribution, and this will shortly become available as a FAS circular supplement.

For these reasons I will discuss in general terms the world outlook for sugar production, consumption, trade, ending stocks and prices. At the follow-up discussion, I will be available to remark on specific aspects of my presentation, as well as developments in the sugar import quota program.

BEET AND CANE SUGAR PRODUCTION

World centrifugal sugar production in 1984/85 is forecast at 97.5 million tons (raw value), 2 percent more than the revised 1983/84 output of 95.6 million. While production has recovered compared to 1983/84, it is still 3 to 3.5 million tons less than peak production during 1981/82 and 1982/83. The current forecast is 2 percent less than the one made in May 1984.

World sugar production from cane is expected to account for 61.49 million tons (63 percent of total sugar production) and from beets 36.05 million (37 percent of the total). The expected increase in 1984/85 is primarily attributable to improved growing conditions in Australia and South Africa and increased beet area and higher yields in the European Community.

Latin America's two largest sugar producing countries, Brazil and Cuba, are expected to account for two-thirds of the region's total output. Brazil will likely retain its position as the world's largest single country centrifugal sugar producer, with an 8.9-million-ton outturn from 98 million tons of cane. In Cuba, production for 1984/85 is forecast at 8.2 million tons, the same as the reported output for the previous season.

Sugar production in the ten countries of the European Community (EC), accounting for 13 percent of total world production, is forecast at 12.8 million tons, 10 percent above a year ago. Compared to the 1983/84 crop year, France, the largest producer in the EC, is expected to produce 4.35 million tons of sugar and harvest an additional 39,000 hectares of beets. Low world prices appear to have had little impact on EC production. The EC support price, although the same in terms of European Currency Units (ECU'S) as the previous year, in fact translates into an increased support price for specific members of the EC such as France. This is because of the relative depreciation of certain EC country currencies against other EC country currencies. The net result has been a moderate stimulus to EC acreage and production.

In other European countries, Spain is expected to produce 7 percent less sugar following a decline in planted cane area. Poland's outturn is expected to be down 5 percent from last year's near-record crop.

Sugar production in the Soviet Union for 1984/85 is forecast at 7.8 million metric tons, down 700,000 tons from early-season expectations and 10 percent less than last year's output. Ample moisture in the west, though favoring beet development, probably reduced sugar formation and increased pest, weed and disease problems. Dryness in the east until June hurt emergence and stand establishment. Transportation and storage of beets continue to be serious problems despite some improvements in recent years designed to expedite shipment to mills. The Soviet sugarbeet area of 3.5 million hectares is slightly less than last year.

South Africa is expecting a record sugar crop of 2.4 million tons in 1984/85, after suffering from a severe drought in 1983/84 which cut sugar production by 35 percent compared to the previous season. South Africa's exports should recover accordingly.

In three of the six largest producing countries in Asia (India, Indonesia, and Pakistan) sugar production is expected to increase in 1984/85 compared to 1983/84. Production in China and Thailand is not expected to change much from the previous year. In the Philippines, the sugar outturn is expected to drop by more than 20 percent because of a continued decline between prices received by producers and high production costs.

Sugar production in Australia is forecast at 3.6 million tons following good weather conditions during the growing season and through the early harvesting period. Cpmparable to South Africa, the recovery in Australian production should enable a recovery in Australia's share of the world sugar market.

SUGAR CONSUMPTION

World consumption of centrifugal sugar in 1984/85 is not expected to increase much over year-earlier levels. 1983/84 consumption was revised upward as a result of increased consumption in India, where more sugar was released by the government for internal use and purchasing power was higher among the rural population following the rise in agricultural production.

1984/85 sugar consumption is projected to increase compared to a year ago in the Caribbean, South America, the USSR, Africa, and the Middle East. 1984/85 consumption is expected to decline compared to 1983/84 levels in Asia and in North America. All other regions are unchanged.

In general, world consumption is stagnating, with annual growth less than population growth. Consumption increases in the developing countries tend to be offset by substitution of alternative sweeteners in developed countries, thereby leading to flat year-to-year demand. This is occurring despite the general economic recovery that is beginning to reverberate throughout the world. We may have met a short term peak in consumption.

SUGAR IMPORTS AND EXPORTS

World sugar imports are projected to decline in 1984/85. North America's imports will decline primarily because of reduced domestic usage in the United States. The EC is expected to import less because of a recovery in production. The USSR continues to decrease its sugar imports as part of its long-range goal of increasing self-sufficiency. Imports are also expected to decline in South America, Other Western Europe, Eastern Europe, Other Africa, and in Oceania. Asia is the only area likely to noticeably increase imports.

Global sugar exports during 1984/85 are epxected to be substantially the same as exports during 1983/84. Declines in 1984/85 levels compared to 1983/84 are expected to be registered in exports from the Caribbean, South America (particularly Brazil), the EC and the Far East. This may be offset by increased exports from Africa (especially South Africa) and Oceania.

Sugar trade has been declining for the past several years because of the production and consumption trends already discussed. Increasing production ir importing and exporting countries combined with generally stagnating world consumption patterns obviously translates into reduced trade.

ENDING STOCKS AND PRICES

Depressed world market prices continue, reflecting record world carryover stocks. In 1984/85, ending stocks are projected to hit 46.8 million metric tons, representing a record 49 percent of consumption. The market reflects this: on August 15, the Number 11 contract price reached a crop year low of 3.59 cents per pound, its lowest level since May 1970.

Prices have been below 5 cents per pound since July 2--the first market day after the collapse of negotiations for an International Sugar Agreement with economic provisions. The market reacted bearishly to this collapse, most likely in anticipation that stocks held under the current agreement would eventually flood the market. The current agreement will expire at the end of this year, and will be replaced by an agreement with administrative provisior

CONCLUSIONS

World "free" market demand has been estimated by the International Sugar Organization at less than 16 million metric tons. If the tonnage traded under long term agreements and other arrangements which provide exporting countries with prices other than that reflected by the Number 11 contract price was subtracted from the "free" market (as defined by the International Sugar Organization) this would imply a much smaller world market trading at world prices than is normally assumed to be the case--perhaps 10 million tons or less.

What this means is that excesses of world production over world consumption--leading to increases in stocks--can have an extremely depressing effect on prices, more so than conventional wisdom might suggest. For example, if the projected 1984/85 increase in ending stocks of 1.4 million tons over 1983/84 ending stocks attempted to find its way into a "free" market of 10 million tons, this would constitute an enormous excess supply in percentage terms.

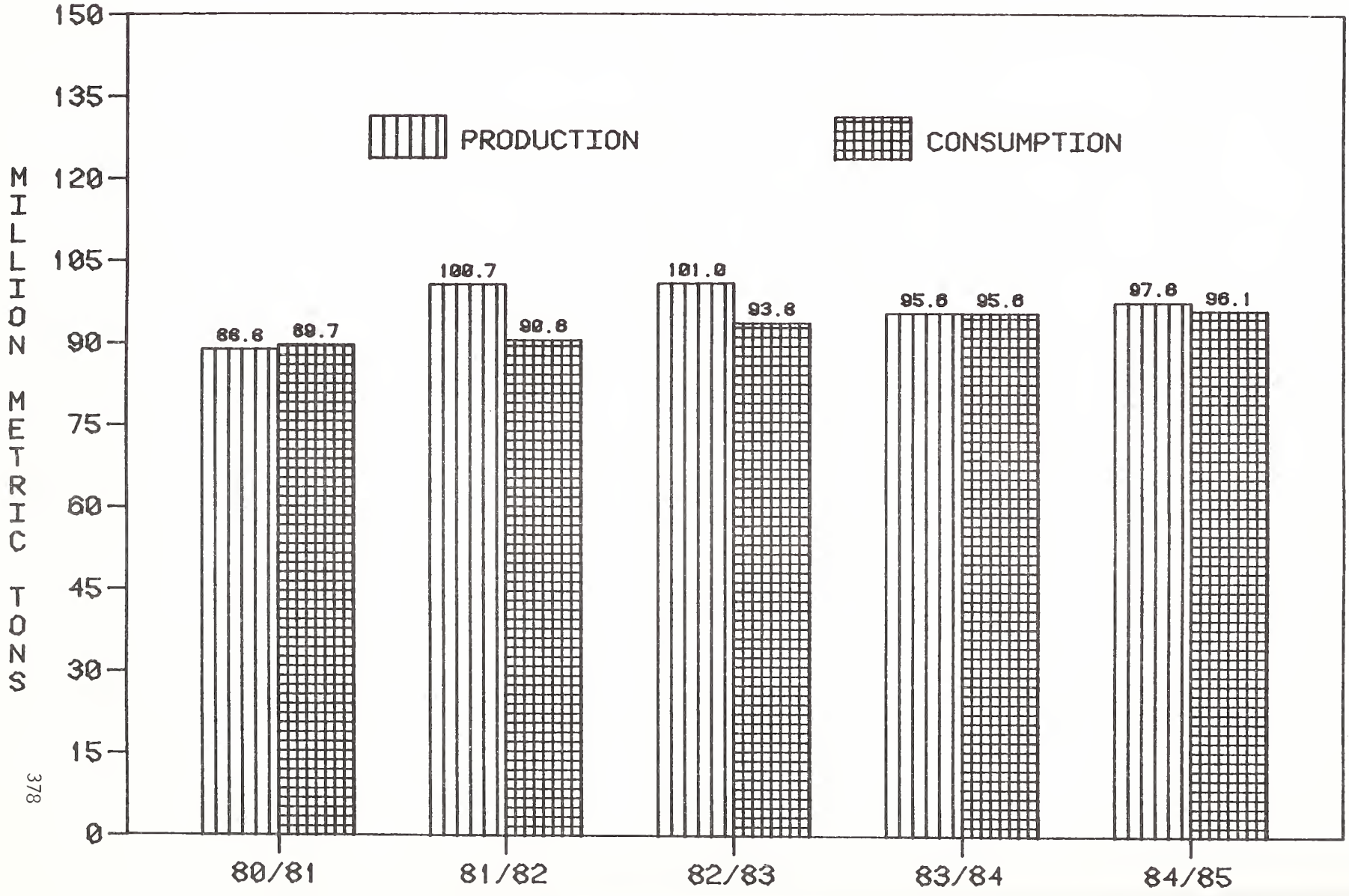
As a result, it comes as no surprise that current world prices have settled in the three-to-five-cents per pound range. It remains to be seen whether or not exporting and importing countries will begin reacting to the low prices by reducing acreage and production or by increasing consumption.

As we all know, the current situation derives from a sustained excess of production over consumption. Indeed, recent experience indicates that production can be below trend and consumption can be above trend and there can still be a build-up of stocks, further depressing prices. The question is, why haven't exporting countries responded by substantially reducing acreage and production and why haven't importing nations reacted by dramatically increasing imports and consumption?

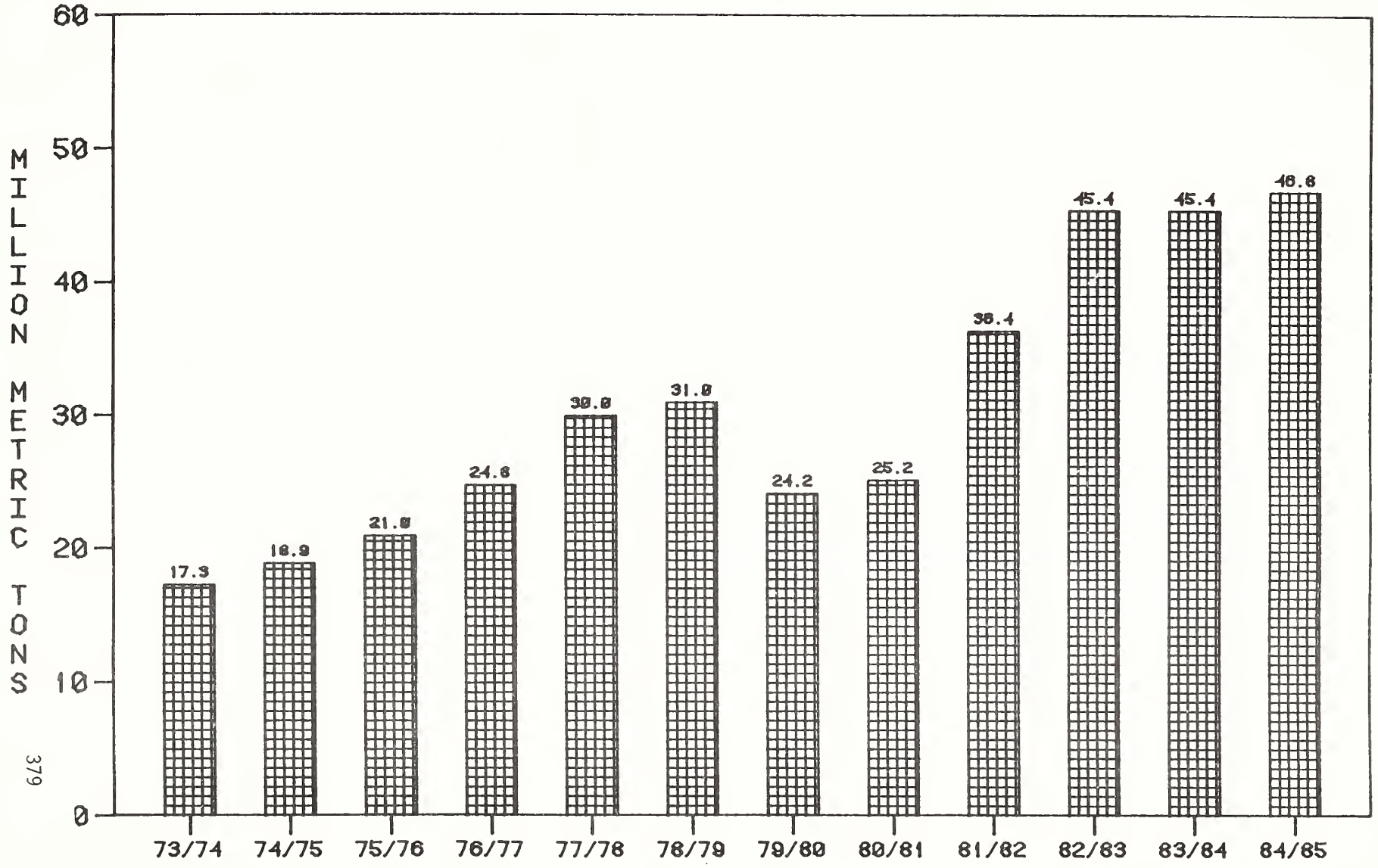
Part of the anwser lies in the difficulty in adjusting production subsequent to large scale labor and capital investment. This becomes a social question in many countries, involving national well being and unemployment. Another part of the answer lies in the fact that only a small proportion of production--perhaps as small as the 10 million tons discussed earlier--is actually traded at the current depressed prices. Specifically, if, of total 1984/85 exports of 30 million tons, only 1/3 or 10 million tons is moved at 5 cents per pound on the "free market" and the remaining 2/3 or 20 million tons is moved at 15 or 20 cents per pound under long term agreements and other arrangements, then the effective, average price to producers and exporters is in the vicinity of 12 to 15 cents per pound. This is certainly not low enough to cause a dramatic producer and exporter response. Finally, it may well be that the marginal cost of imported production inputs per pound of sugar produced is still less than the 5 cents per pound which can be obtained on world markets for sugar. This may be particularly important to foreign exchange constrained developing countries. If these countries can obtain more in foreign exchange from exports of a product than the foreign exchange outlay on imports required to make this product, then they may have an incentive to continue to produce for export, despite the fact that world prices at under 5 cents per pound are well less than the average cost of production.

On the consumption side, it may be the case that we have reached a general saturation point, in terms of traditional uses for sugar. Promotion of alternative uses for sugar, such as for fuel and alcohol production, could spur consumption and bring demand more in balance with supply. What is clear is that barring major adjustments in production and a major spur in consumption, there is no apparent light at the end of the tunnel for the world sugar market. Without a doubt, it could take quite some time to restore balance to the international sugar market.

WORLD CENTRIFUGAL SUGAR PRODUCTION AND CONSUMPTION FOR 1980/81-1984/85



WORLD CENTRIFUGAL SUGAR ENDING STOCKS FOR 1973/74-1984/85



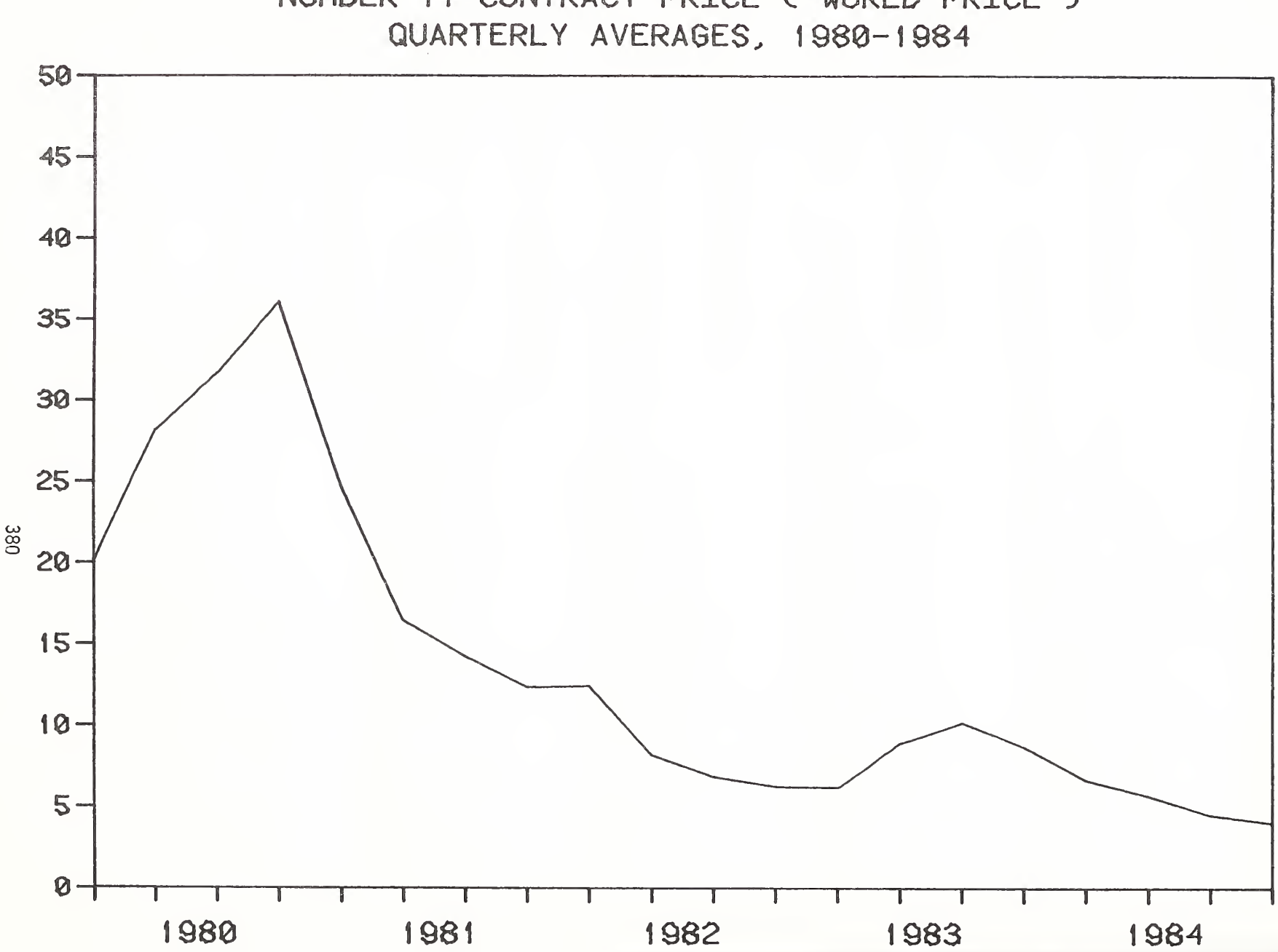

NUMBER 11 CONTRACT PRICE ("WORLD PRICE")
QUARTERLY AVERAGES, 1980-1984
50
45
40
35
30
25
20
15
10
5
0
1980
1981
1982
1983
1984

TABLE 1: WORLD PRODUCTION, CONSUMPTION AND ENDING STOCKS
(Million Metric Tons, Raw Value)

Crop Years	Production	Consumption	Stocks
1972/73	75.1	77.7	17.2
1973/74	80.0	80.0	17.3
1974/75	78.5	77.1	18.9
1975/76	81.7	79.2	21.0
1976/77	86.3	81.9	24.8
1977/78	92.7	86.2	30.0
1978/79	91.3	89.6	31.0
1979/80	84.6	89.5	24.2
1980/81	88.5	88.5	25.2
1981/82	100.6	89.4	36.4
1982/83	101.0	92.0	45.4
1983/84	95.6	95.6	45.4
1984/85	97.5	96.1	46.8

TABLE 2: SUGAR PRODUCTION BY REGION

REGION	1983/84		1984/85	
	Beet	Cane	Beet	Cane
	1,000 metric tons			
North America	2,554	5,656	2,710	5,658
South America	257	14,230	353	13,840
Central America	0	1,723	0	1,800
Caribbean	0	9,941	0	9,900
European Community	11,585	0	12,780	0
Other West Europe	2,297	10	2,350	10
East Europe	5,727	0	5,880	0
USSR	8,700	0	7,800	0
North Africa	427	1,043	440	1,070
Other Africa	0	5,083	0	6,010
Middle East	2,300	100	2,281	200
Asia	1,540	18,935	1,459	18,975
Oceania	0	3,445	0	4,030
Total by Type	35,387	60,166	36,053	61,493

TABLE 3: SUGAR CONSUMPTION BY REGION

REGION	1982/83	1983/84	1984/85
	Million Metric Tons		
North America	12.3	12.0	11.9
Caribbean	1.3	1.3	1.4
Central America	0.8	0.8	0.8
South America	10.7	10.8	10.9
European Community	10.2	10.1	10.1
Other Western Europe	2.9	2.8	2.8
Eastern Europe	6.0	6.0	6.0
USSR	13.0	13.2	13.3
North Africa	3.7	3.7	3.7
Other Africa	4.2	4.3	4.5
Middle East	4.5	4.8	5.1
Asia	23.4	24.8	24.7
Oceania	1.0	1.0	1.0
World Total	93.8	95.6	96.1

TABLE 4: SUGAR IMPORTS BY REGION

Region	1981/82	1982/83	1983/84	1984/85
	1,000 Metric Tons			
North America	4,595	4,710	4,555	4,117
Caribbean	385	136	129	139
Central America	20	23	---	---
South America	823	990	681	393
European Community	2,402	2,111	2,765	2,333
Other Western Europe	1,009	1,015	872	825
Eastern Europe	1,115	980	1,150	1,078
USSR	6,883	5,926	5,600	5,250
North Africa	2,095	2,194	2,225	2,250
Other Africa	1,032	984	1,259	1,070
Middle East	2,593	2,715	2,765	2,795
Far East	5,826	6,369	5,618	5,898
Oceania	157	299	220	212
World Total	28,935	28,452	27,839	26,260

TABLE 5: SUGAR EXPORTS BY REGION

Region	1981/82	1982/83	1983/84	1984/85
	1,000 Metric Tons			
North America	394	275	423	255
Caribbean	8,919	8,004	8,343	8,278
Central America	679	1,011	832	804
South America	4,335	4,265	4,570	4,048
European Community	6,855	6,776	5,895	5,430
Other Western Europe	240	316	194	155
Eastern Europe	479	853	811	780
USSR	268	165	250	300
Africa	2,567	2,635	2,238	2,755
Middle East	150	195	550	550
Far East	5,106	4,079	3,674	3,565
Oceania	3,052	3,127	2,890	3,300
World Total	33,044	31,701	30,670	30,220

TABLE 6: RAW SUGAR PRICES
ANNUAL 1975-1983
QUARTERLY 1980 TO DATE

Year/Month	World Price No. 11 Contract	Domestic Price No. 12 Contract
	Cents per pound	
1975	20.49	22.47
1976	11.58	13.31
1977	8.11	11.00
1978	7.82	13.93
1979	9.66	15.56
1980	29.04	30.11
1981	16.93	19.73
1982	8.42	19.92
1983	8.49	20.04
1980:		
Jan-March	20.20	21.84
Apr-June	28.20	28.89
July-Sept	31.70	32.64
Oct-Dec	36.06	37.09
1981:		
Jan-March	24.69	26.50
Apr-June	16.44	18.76
July-Sept	14.25	17.33
Oct-Dec	12.35	16.34
1982:		
Jan-March	12.43	17.69
Apr-June	8.17	19.50
July-Sept	6.84	21.83
Oct-Dec	6.23	20.69
1983:		
Jan-March	6.19	21.62
Apr-June	8.93	22.52
July-Sept	10.17	22.28
Oct-Dec	8.67	21.75
1984:		
Jan-March	6.65	21.80
April-June	5.67	22.03
July-Sept	4.51	21.89
Oct-Nov	4.01	21.72

OUTLOOK FOR U.S. SWEETENERS

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Economic Research Service

Annual Agricultural Outlook Conference
Session #24, Washington, D.C.

For Release: Wednesday, December 5, 1984

INTRODUCTION

It is now ten years since the U.S. Sugar Act ended in 1974. In 1985, Congress will consider new farm legislation, to replace the expiring Agriculture and Food Act of 1981. Many key issues relating to the U.S. sugar industry will likely be debated. The outcome, in terms of policy objectives and program specifics, will be of interest to beet and cane growers, processors, refiners, industrial sweetener users, consumers, foreign sugar suppliers, and, not least, corn sweeteners and the corn wet milling industry.

Although the Sugar Act, with its comprehensive controls over production, imports, and prices, ended a decade ago, some "safety net" program for sugar has prevailed over most of the past ten years. Exceptions have been the 1975, 1976, and 1980 crops when world sugar prices were sufficiently high. Within the United States, since 1974, alternative sweeteners have been kept freely competitive among each other. Consequently, we saw the radical transformation of sweetener demand in favor of lower-cost high fructose corn sirups and away from sucrose. That transformation is almost complete, but another is emerging: the expansion of demand for low-calorie sweetened food and beverages, and the ascendancy of the sweetener aspartame in particular.

In England, at least at Oxford, there is a course of studies called PEP--Politics, Economics, and Philosophy. We are very fortunate today to have with us Mr. Simon Harris, a distinquished sugar analyst and, best of all, from the land of PEP! Perhaps, he will have special insights for us as we try to decipher what is to come for sugar. Meanwhile, let us see what we can of 1984/85.

SUGAR

Prices

Effective October 1, a market stabilization price (MSP) of 21.57 cents a pound, raw sugar, was established for 1984/85 production, up from 21.17 cents in 1983/84. Actual market prices (c.i.f., duty/fee-paid, New York, Contract No. 12) averaged below the MSP in October and, as of the third week in November, were about 21.5 cents a pound. Continuation of domestic prices below the MSP poses the possibility of Commodity Credit

Corporation (CCC) take-over of sugar loan collaterals and, thereby, a budget cost. A more immediate concern to the sugar trade is the possibility of an import fee on raw sugar. Such fees have been zero since October 1982, but the fee mechanism has remained in place. Should the No. 12 price average below the MSP in the 20 consecutive days prior to December 20, the difference would be the import fee for first-quarter 1985. Both supply and use factors account for the downturn in the No. 12 spot price.

Before turning to these factors, let us note that in fiscal 1984, the No. 12 never fell below the MSP and in only one day did it rise as much as 5.2 percent above the MSP of 21.17 cents a pound. The fiscal 1984 domestic sugar price averaged 3.2 percent above the MSP; in comparison, fiscal 1983 prices averaged somewhat higher, 5.1 percent, above the 20.73-cent MSP for that year. Domestic raw sugar prices averaged 21.84 cents a pound in the fiscal year just ended, only marginally higher than the fiscal 1983 average of 21.78 cents. For the July-September quarter, prices were actually 1/2-cent lower this year, despite the higher MSP.

Wholesale list prices for sugar in the Northeast averaged 31.5 cents a pound in third-quarter 1984, down 1-cent from a year ago. In other market areas, list prices show some ups and some downs from last year. However, actual prices reportedly are below last year. For example, actual Chicago-West prices are estimated at about 15 percent below list in November, about 2 cents below 1983 levels.

The U.S. average retail prices for sugar (all package sizes) in third-quarter 1984 was 36 cents a pound, 1/2-cent below a year ago. In the Northeast, retail prices averaged 1.8 cents below third-quarter 1983.

Because of lags and the importance of other cost factors besides sugar, changes in sugar wholesale prices do not directly translate into prices of sweetener-containing products. Retail prices for such products rose 2.7 percent between January and September 1984, compared with a 1.8-percent rise for the same period in 1983. Confectionery and chewing gum prices went up 5.3 percent, followed by 4.2 percent for cereals and 3.9 percent for ice cream products. Cola drinks (except diet) fell 1 percent while noncarbonated drinks (including diet cola but excluding coffee) rose 3.1 percent.

Production

Fiscal 1983/84 (October/September) U.S. sugar production, published November 15 in the Sugar Market Statistics, totaled 5.8 million short tons, raw value, a much higher figure than earlier estimated. The 1983/84 crop year (September/August) continues to be placed at 5.6 million tons, as apparently the 1984 sugar output for September was much higher than in September 1983. Most of the September output increase was beet sugar and the early market arrival of this sugar was a factor in lowering prices this fall, especially in the Chicago-West area.

Reflecting the higher September 1984 outturn, beet sugar production in the 1984/85 crop year is expected to rise nearly 5 percent, to 2.8 million tons, raw value. Much of the rise reflects the sharp recovery in California's harvested acreage after two successive weather-poor crops. Overall U.S. sugarbeet harvest area is up 3.7 percent in 1984/85, with increases in 9 States, decreases in 3, and 1 unchanged. The U.S. average sucrose recovery would produce 2.86 million tons of sugar, raw value. Our current estimate of 2.8 million is based on below-average sucrose recovery particularly in the Great Plains and the Red River Valley.

U.S. sugar cane acreage for seedcane and processing into sugar in 1984/85 is estimated 3.2 percent down from last season. Acreage is estimated to fall 13 percent in Louisiana, because of last December's freeze; fall slightly in Hawaii; remain unchanged in Texas; and rise slightly in Florida. The prospective average cane yield of 37.3 tons an acre is up marginally from last year. Cane sugar output is estimated to rise in Florida and Texas to levels of two seasons ago. Louisiana output could be down 27 percent. The Hawaiian Sugar Planters Association estimates Hawaii output in 1984 at slightly below last year. U.S. raw cane sugar production is expected to fall 2.4 percent, to 2.86 million tons.

The rise in beet sugar production and decline in cane sugar add up to a total U.S. sugar output of 5.66 million tons in the 1984/85 crop year, up 1.1. percent from last season. On a calendar year basis, 1984 sugar output is estimated at 5.54 million tons, about 140,000 tons below 1983 and nearly 400,000 tons below 1982.

Consumption

Sugar consumption has declined yearly since 1977 as lower-priced high fructose corn sirup (HFCS) edged out sugar in a wide range of industrial uses. Consumption is estimated to fall 360,000 tons in 1984 following a 250,000-ton drop last year. Without robust economic growth this year, the drop would be greater. But with per capita personal disposable income rising an estimated 9.2 percent on top of a 6.3 percent growth in 1983, sugar deliveries are actually up for some important user categories. The first 3 quarters of 1984 compared with 1983 show a 5.5-percent rise in sugar deliveries in dairy products, 4.6-percent rise in confectionery, and over 2-percent in baked goods and cereals. These are markets where HFCS substitution for sugar is at saturation or near technical limits. Sugar deliveries continued to decline in processed foods and, predictably, in beverages, the market which still has a large HFCS-use potential. Sugar deliveries in the beverage market during January-September 1984 fell 26 percent from 1983, with more losses forthcoming.

Table 1.--U.S. sugar deliveries, 1979, 1983, and 1984

Item	1979	1983	January-September		Percent change, 1983 to 1984
			1983	1984	
	Million short tons, refined				
Bakery/cereal	1.3	1.4	1.03	1.05	2.2
Confectionery	0.9	1.1	.80	.84	4.6
Processed foods	0.7	.5	.36	.34	-5.2
Dairy	0.5	.4	.30	.31	5.7
Other	0.5	.4	.32	.32	-0.6
Beverage	2.4	1.2	1.00	.74	-25.7
Nonindustrial	3.6	3.1	2.25	2.03	-2.0
Total, including non-food	9.9	8.2	6.16	5.74	-4.0

U.S. sugar consumption in fiscal 1983/84, is estimated at 8.674 million tons, raw value, down some 300,000 tons from fiscal 1982/83. A drop of about the same amount was earlier estimated for fiscal 1984/85, but last month's major cola company announcements on HFCS approvals required significant recalculation. In fiscal 1984/85, sugar use is now estimated at 8.165 million tons, down 500,000 tons from fiscal 1983/84.

The consumption estimates for fiscal 1984/85 and 1983/84 are based on U.S. sugar deliveries data but also include the raw sugar equivalent of sugar blends entering from Canada, Mexico, and foreign trade zones. These blends used to be innocuous. However, as world sugar prices fell drastically below U.S. levels, ingenious ways were devised to get around sugar quota restrictions. Sugar has been blended or commingled with some other product such as dextrose and then sifted out. A host of such blends continues to enter. U.S. Customs on November 7 issued a directive to stop at least some of the spurious blends. In fiscal 1983/84, about 125,000 tons of sugar equivalent in blends entered the United States. In 1984/85, assuming no further restrictive action, more than 140,000 tons are estimated to enter.

The current 1984/85 quota was set last September at 2.677 million short tons, raw value (including small exporters' allowances and specialty sugar), about 500,000 tons below the previous quota year, reflecting reduced sugar consumption, an allowance for blended sugars, and an expectation at that time, that fiscal 1984/85 production would be higher than in 1983/84.

To recap, let us look at our latest supply and use estimates. Stocks at the end of fiscal 1984/85 are projected at 1.772 million tons, up 162,000 from fiscal 1983/84 as a result of increased beginning stocks, higher total sugar supply, and lower total use compared with 1983/84.

Table 2.--U.S. sugar supply and use,
fiscal years 1983/84 and 1984/85

Item	FY 1983/84	FY 1984/85
	1,000 short tons, raw value	
Beginning stocks	1,408	1,610
Production	5,794	5,660
Receipts from Puerto Rico	24	50
Imports, total	3,613	2,932
Sugar blends	125	140+
Quota-exempt	450	100
Quota	3,130	2,677
Total supply	10,839	10,252
Exports	474	265
Domestic use	8,674	8,165
Refiner loss and statistical adjustment	81	50
Total use	9,229	8,480
Ending Stocks	1,610	1,772

HFCS AND CALORIC SWEETENERS

Although HFCS production capacity was tight in mid-1984 during the seasonal demand peak and following higher HFCS approvals by the Coca Cola Company in February and May, market requirements were apparently accommodated. Production earlier in the year, use of "swing" capacity (shifting to HFCS from ethanol), conversion of HFCS-42 capacity to HFCS-55 production, and over 100,000 tons of Canadian HFCS all combined to meet demand. Prices rose, then eased seasonally as capacity utilization declined. On Tuesday, November 6, however, came the electrifying news that the Coca Cola Company and PepsiCo, Inc. had approved full, 100-percent HFCS use as a sweetener in their cola soft drinks. This meant a full-year incremental demand of about 650,000 tons HFCS and a corresponding drop in sugar use. In all, in 1983 and 1984, soft drink companies' approvals for HFCS use totaled an incremental HFCS demand of about 1.6 million tons. Not all of the November 1984 approvals may be implemented within fiscal 1984/85, although additional HFCS capacity is planned to come on stream by summer 1985. However, by 1986, the HFCS revolution will have been completed. HFCS displacement of sugar would end and sugar use could stabilize at about 7.8 million tons, raw value.

A profile of yearly caloric sweetener use for 1982-86 is projected as follows.

Table 3.--Caloric sweeteners consumption, 1982-86

	Sugar, raw	Sugar, refined	HFCS	Total corn sweeteners, including HFCS, glucose, and dextrose	Honey and edible sirups	Total
			Pounds per capita, dry basis			
1982		73.7	26.7	48.2	1.3	123.2
1983		71.1	30.7	52.2	1.3	124.6
1984		67.5	36.3	57.9	1.4	126.8
1985		62.7	41.0	62.5	1.4	126.6
1986		60.4	42.3	63.8	1.4	126.4
			Million short tons, dry basis			
1982	9.160	8.561	3.097	5.595	0.151	14.307
1983	8.912	8.333	3.600	6.120	0.153	14.606
1984	8.550	7.991	4.300	6.844	0.165	15.000
1985	8.015	7.490	4.900	7.469	0.168	15.128
1986	7.800	7.290	5.100	7.693	0.169	15.248

Total caloric sweeteners use could be lower than shown in Table 3 if U.S. economic growth appreciably slows down and reduces demand for sweetener-containing products. HFCS use could also be less, if diet soft drinks grow substantially at the expense of regular soft drinks, rather than as a complement. Per capita HFCS use would then be lower than indicated. However, at least through 1986, HFCS tonnage should continue to gain.

Demand for low-calorie soft drinks has been rising rapidly in recent years but diet drinks have been boosted also by the favorable market reception to aspartame (APM). APM use in 1984 is estimated at about 5.8 pounds per capita, sugar-sweetness-equivalent, sharply up from an estimated 3.5 pounds in 1983. Significant decisions by major soft drink makers, to switch to 100-percent APM instead of an APM-saccharin blend, have been made in 1984, with two major firms making the leap as recently as last month. Demand for APM is apparently more than production capacity, but price is being kept relatively stable, perhaps as a market strategy for longterm growth. A substantial rise in capacity is projected, from a new plant in Georgia, in 1985.

1985/86 SUGAR OUTLOOK

Planting intentions for the 1985 sugarbeet crop will be reported by USDA in February, and sugarcane acreage estimates will appear in June 1985. If the 18-cent loan rate given by the 1981 Farm Act is assumed for

1985/86, there is good potential for higher sugar production. Sugarbeet acreage appears likely to rise in Michigan, where some processing capacity expansion is planned. Potential expansion also exists for the Great Plains, although much depends on processing company finances and relations with growers. In Louisiana, growers have planted enough cane this fall to permit recovery from this year's very poor crop.

With total sugar consumption projected to decline further, and the potential for a higher crop, less sugar would need to be imported in 1985/86.

AFTER THE ISA

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Has the structure of the world market so changed that the current depression in sugar prices will be longer-lived than previous troughs in the world sugar cycle? For that matter, will it be correct to speak of a world cycle at all in the future? These questions are raised because of the suspicion that the degree of insulation from world markets of sugar production and consumption has tended to increase in recent years for many countries, allied with the major structural changes that have been seen. Now that the negotiations for a 1984 International Sugar Agreement (ISA) with economic provisions have failed, there are not any international provisions to moderate the working through of the forces for change which have been showing themselves in the last decade.

It is questionable in any case whether, even if a new ISA had been agreed, it would have had much, if any, influence on the fundamental forces affecting the world sugar economy. Thus, in common with all other International Commodity Agreements, an ISA could have influenced only indirectly, if at all, the domestic support policies followed by countries for their sugar industries - normally as part of their general agricultural support policies. Secondly, the spread of alternative sweeteners, principally based on maize, but including also the so-called non-caloric sweeteners, would not have been susceptible to ISA controls; apart from at the margin with ISA provisions to prevent countries discriminating against sugar in their domestic tax structures. Thirdly, an ISA would not have been able to prevent the change in the nature of the product traded internationally - from raw to white sugar - which is still continuing, although this change has profound implications for the future of the world's port refining industries.

Perhaps the only area where an ISA would have been able to moderate the forces for change would have been by helping develop the programmes various sugar industries are using to fight the health lobbies campaigning against sugar as a health risk. For this area, of course, an ISA with economic provisions is not necessary: an administrative Agreement serving as a clearing house is adequate.

The effects of Government Support Policies in slowing adjustment

Virtually all Governments support their sugar industries, while most also influence the prices at which their consumers have access to sugar. This is by way of being a truism. What is not so obvious, however, are the effects of the policies in slowing adjustment.

The conventional analysis of world sugar cycles explains the long periods of depressed prices as being due to investment in expanding processing facilities and the land areas devoted to sugar cultivation triggered by a world price peak normally caused by exogenous factors, such as a coincidence of short crops following a stock draw-down. Once this investment comes on stream, supply rapidly recovers, stocks build up and prices are depressed in consequence. Because the capital has been

invested, however, production is maintained to get a contribution toward fixed costs. Demand eventually picks up stimulated by low prices, but on a rising trend anyway because of population and income growth; stocks run down and prices recover.

Price peaks since WW II have occurred in 1951, 1957, 1963, 1974 and 1980. Apart from the 11-year gap in the 1960's, the average gap between price peaks has been six years. On which basis, if the world sugar economy has reverted to a six-year cycle then the next price peak should occur in 1986. This is unlikely both because of the structural changes which Government policies have helped generate and because of the size of the stocks currently overhanging the world market which will take time to reduce.

Looking at the developed market economies first, the support policies followed have led to a drop in US and Japanese imports, while encouraging EEC exports. These policies would not have been affected by an ISA, and there is no reason to think they, or their effects, are easily reversible. The results of developed countries insulating producers and consumers can be seen in the lack of response to world market conditions seen in recent years (although since the change in the EEC's sugar regime in 1981, its production has become more responsive to the world market).

Change from peak consumption year for sugar
(million tonnes raw)

		Peak	1983	Change
Consumption:	Japan	3.336 (1974)	2.783	-0.553
	USA	10.630 (1973)	8.074	-2.556
	EEC	11.698 (1974)	10.534	-1.164
	Total	25.664	21.391	-4.273
Trade in peak consumption year:	Japan (imports)	2.853	1.868	-0.985
	USA (imports)	4.835	2.667	-2.168
	EEC (imports)	2.164	1.516	-0.648
	Total	9.852	6.051	-3.801
	EEC (exports)	1.128	4.910	+3.782
	Net effect on world market			7.583

It is not clear how much of the drop in consumption in these three areas has been due to a trend factor arising from diet changes consequent upon health fears: it is likely that most of the consumption drop has been a result of the high domestic prices set by Governments in choking-off demand and encouraging substitution by starch sweeteners. In the three principal developed market economies, consumption peaked in 1973/74 and has fallen some $4\frac{1}{4}$ million tonnes since - a drop which has been reflected in a cut in imports (down 3.8 million tonnes) as support policies have maintained the domestic industries. This trend is reflected in the developed market economy share of world imports which halved from 63 per cent to 31 per cent over the decade 1972 to 1982.

During the same period the EEC emerged as a major exporter (a rise of $3\frac{3}{4}$ million tonnes) so giving a net worsening for the world market of some $7\frac{1}{2}$ million tonnes over the decade. In other words, the size of the market open to exporters (other than the EEC) fell by this amount.

The centrally planned economies have increased their share of world imports markedly: up from $17\frac{1}{2}$ per cent in 1972 to 36 per cent in 1982 - a rise of almost six million tonnes, of which $5\frac{1}{2}$ million tonnes was an increase in USSR imports. This was fortuitious, arising from the relative failure of Russian agriculture in the '70's, with

imports being increased to maintain consumption levels. Should the USSR have greater success with its agriculture in the 1980's, then the volume of imports would be reduced. Generally, the USSR only responds to its domestic position, its Government's policies and the position of Cuba (its principal supplier) and only barely to world market conditions.

What about the developing world? Here many Governments have created new industries principally for import saving reasons, but generally with a margin for export. Or they have expanded existing industries to develop an export capability. In either case the effect for the world market is much the same - reduced import demand and an increased number of exporters to the world market.

The scale of this development can be gauged by comparing the exporter memberships of the 1958 and 1977 ISA's, i.e. 20 years later. In the 1958 ISA, total exporter membership was 28 countries, of which nine countries are not members of the 1977 ISA (five belonging to the now EEC, Taiwan, Czechoslovakia, Poland and Portugal) while another one is an importer member (the USSR); yet exporter membership of the 1977 ISA totals 46 countries - a net acquisition of 29 exporter members. Even allowing for the ten Commonwealth sugar exporters who did not join the 1958 ISA because the Commonwealth Sugar Agreement covered most of their exports, this still means 19 new countries that acquired a significant enough export capacity to want to be members of an ISA in the last 25 years. It can be expected that these countries will maintain their export capacity for as long as possible no matter what happens to world prices. Indeed for many of these countries conventional accountancy profit and loss concepts bear little relevance to their production decisions. The criteria determining their decisions relate to the importance of maintaining their domestic sugar industries for regional, employment creation and food security reasons, as well as the premium they place on foreign exchange earnings. The relative fixity of developing country supply, at least in the short run, in the face of depressed world prices is hence entirely explicable in terms of Governmental support policies.

For the future, many developing country Governments have expansion plans for their industries based on domestic self-sufficiency objectives (e.g. China and Indonesia). In other words whatever growth in world consumption there is, is concentrated in the developing world and is to a large extent being met from domestic production and hence not generating an equivalent rise in imports. At the same time countries such as Mexico, Chile and Nicaragua - whose exports have fallen markedly because of the state of their industries - have recovery plans to at least regain former production levels. While Cuba, one of the world's major producers and exporters, has major expansion plans.

The effect of Governmental policies, as discussed so far, is to reduce the flexibility of response of both sugar producing and consuming countries to world market conditions. As a result the conditions leading to the depressed world price phase of the world sugar cycle are prolonged. In other words, the length of the cycle will be elongated as a general proposition.

This time round, it is very obvious that existing production capacity is more than adequate for several years ahead at the reduced rates of world consumption growth now observed (two per cent annually as against the three per cent of the 1960's or the five per cent of the 1950's). The important point is that in the past forecasts of increasing consumption in the sugar sector have traditionally been taken as justifying increases in production capacity. It is now estimated that there is already sufficient world capacity in terms of processing capacity to produce "in excess of 115 million tonnes of sugar" (Hannah, 1984a) as compared with current consumption of around 96/97 million tonnes. FAO (Mulherin, 1984) are projecting that even by 1990, world sugar consumption will have reached only 110 million

tonnes, whereas a world production figure of this magnitude "could be attained very much earlier".

Given the commitment by many developing countries to increasing their industries to match the increases in domestic consumption, plus the expansion and/or recovery plans referred to earlier, it is clear that any expansion in consumption in the next few years will not run-up against processing capacity constraints. This structural over-capacity - principally generated by Governmental and Aid Agency efforts - is a reflection of Governmental policies in insulating their industries and taking investment and production decisions without regard for the state of the world market. It, of course, reinforces the conclusion that the upturn in the world sugar cycle of market prices which might have been expected in 1986 will occur later. (In this regard the role of the International Aid Agencies in encouraging development of new production capacity in the developing world without regard to the state of the world sugar economy as a whole deserves serious questioning: maybe this is an issue which the ISA Secretariat could take up in the future with the construction of an inventory of investment projects and their progress or otherwise).

The impact of alternative sweeteners

On the demand side, the impact of Governmental sugar policies in inadvertently fostering the development of alternative sweeteners is well known. Technological breakthroughs in the late '60's coupled with the incentive to investment given by the price surges of 1974 and 1980 have lead to the installation of substantial manufacturing capacity for High Fructose Syrup (HFS). This has gone furthest in the USA where it has virtually entirely displaced sugar from soft drinks and has eroded to some extent sugar's position in processed foods and cereal and bakery products. This development has been the principal cause of the drop in US sugar consumption seen above. But Barry (1984) points to the importance of the domestic sugar support programme in providing an umbrella for HFS production, where he writes "... without a sugar programme and at the low world sugar prices of 1984, relative prices in the United States would shift in favour of recovery in sugar use and a retraction of HFCS gains". A conclusion echoed by Harris (1984): "... the chief beneficiary of the US domestic support prices for sugar is not the US sugar industry as such, but the new HFS industry ...".

HFS production has developed strongly in Japan, under cover of a high domestic support programme for sugar plus incentives (now withdrawn) for its production. In Canada, however, HFS production has not been so successful, largely due to the fact there isn't a high domestic market price for sugar. In the EEC also, HFS production has not expanded dramatically because of the system of domestic quotas applied which limit production to 198,085 tonnes dry matter, as compared with a 1984 production of 3.9 million tonnes dry basis in the US (USDA, 1984).

Nevertheless, in world terms most forecasts suggest that by 1990 HFS will be taking eight to ten per cent of sweetener consumption, as compared with virtually zero 20 years earlier. So long as HFS stays as a liquid, its ultimate market share is limited. As a result the impact of HFS may be best thought of as taking a wedge out of sugar consumption, but once its potential market is filled (principally, but not only, soft drinks) then it might be thought there would be scope for an increased rate of sugar consumption growth. Unfortunately, in the developed world where HFS has had the greatest effect, sugar consumption is close to satiation levels and is under attack from both the health lobby and from other non-caloric sweeteners. In particular, Aspartame - only recently launched - is expected to have a significant effect on both sugar and HFS consumption. FAO are tentatively suggesting that by 1990 Aspartame may have displaced 250,000 tonnes sugar: an estimate which is probably on the low side.

It is significant that many developing countries (Argentina, Egypt and Uruguay to name but three) are now creating HFS production facilities of their own. Often they have the necessary starchy raw materials readily to hand (e.g. maize, cassava, rice and sorghum), while such an industry yields production of other raw materials useful for cattle feeds.

The impact of alternative sweeteners has been a major factor in slowing rates of world consumption increase. As growth in world sugar consumption is now concentrated in the developing world it has become more dependent on the economic situation of the countries in question (i.e. more income and price sensitive) as well as slower than when growth was occurring also in the developed world. Currently, of course, with the debt position of many developing countries this has meant that despite the low world prices for sugar, consumption has not increased as much as otherwise could have been expected.

The development of alternative uses for cane

As part of Governmental policies for their sugar industries, however, at least in the cane growing countries, we are starting to see the development of alternative uses for cane - principally alcohol for use as an octane improver in fuel, or as a complete fuel as in Brazil. The importance of this development is twofold. Firstly, it enables countries such as Argentina to develop a strategy which enables them to prevent their cane growing and crushing industries getting too rundown during periods of low world sugar prices, even while they are reducing the quantities of sugar they are prepared to export because of the costs involved to their Government Budgets and/or to their consumers. Secondly, as a result of having an area of cane devoted to ethanol production it means that the cane is there to take advantage of an increase in world sugar prices. Thus, in the case of Brazil, it is widely believed that up to 20 per cent of the cane area devoted to ethanol production may be switchable to sugar production should the ratio between sugar sale prices on the world market as against oil purchase prices indicate this would be beneficial.

Brazil is the country where the use of cane for ethanol has gone farthest because of the availability of large land resources on the one hand, and the significance of oil as the largest single item in its imports on the other. Nevertheless, many other Latin American countries are becoming interested, but successful development would seem to predispose relatively low opportunity costs for their land and a sufficiently high premium being placed on the need to reduce (or at least stabilise) oil imports. With oil prices declining in real terms - let alone nominal terms as at present - it may be that only a few of the larger countries may take up the cane for ethanol option, although many countries (both large and small) are considering its feasibility for their particular circumstances.

The world sugar cycle

So far the impression would be that the world market is in for a sustained period of low world prices and that the sugar cycle is no longer important. Both impressions are somewhat misleading. World consumption is growing, while despite the structural over-capacity discussed above the world's short run production base is being eroded.

On the consumption side, FAO (Mulherin, 1984) suggests a growth of two per cent annually to 1990, equivalent to some two million tonnes a year. Abel, Daft & Earley (1984) identify a world consumption growth trend in recent years of around 1.8 to 1.9 million tonnes annually. While there is room for argument about the estimates of further consumption growth (depending in particular on the assumptions for the income and debt positions of the developing world and the real level of world prices) there is no doubt it is still occurring. The FAO projection referred to already

is for world sugar consumption of some 110 million tonnes by 1990. This compares with the highest consumption level so far attained of almost 95 million tonnes in 1983/84 and an estimated 97 million tonnes in 1984/85 (WSJ, 1984).

On the supply side some countries are more vulnerable than others to a sustained period of world prices (as discussed in the next section below). The result is that supply capabilities for some countries are being eroded.

Not surprisingly world markets will react in due course, once the direction of the movement in world stocks is seen to be downwards, with some recovery in prices. The structural issues discussed already, however, indicate that the sort of world price peaks seen in the past may not be so pronounced in the future.

Thus, in terms of physical sugar capacity, the EEC, Brazil and India have the capacity to expand exports very quickly - should they so wish. The EEC is an extremely efficient beet sugar producer with the capacity to increase production by ten to 15 per cent within a seven/eight month season. Brazil's ability to switch cane from ethanol to sugar production has been remarked above. India, as one of the world's five largest centrifugal sugar producers has the ability to switch production from non-centrifugal sugars (consumed domestically) to centrifugal sugars by relatively simple alterations to its institutional price and tax structures, although internal political considerations may restrict its speed of response. Insofar as other sugar producers develop enthanol production from cane there will be more switchable cane to sugar production, as with Brazil.

There is a change also in the nature of the world's futures markets so that anticipatory speculation is likely to bring forward rising price signals before otherwise would have been the case. In turn this triggers an earlier physical response.

Finally with the increasing concentration of the world's import demand in the developing world (up from 24 per cent to 40 per cent of world imports in the decade 1972 to 1982), demand will become rather more price sensitive when prices surge. Hence demand is less likely to be maintained in the way that it has been in the past, as developing country Governments will not have the necessary availability of uncommitted foreign exchange.

The result of these factors is that although the world sugar cycle will continue to exist, its amplitude will be significantly reduced.

If this conclusion is substantiated in practice, as I fully expect it to be, then it carries important implications for the structure of the world sugar industry. Traditionally sugar industries have relied on the regular peaks in the world sugar cycle to provide the icing on the cake in terms of spare funds, some of which have been used for the necessary investment and re-investment to improve efficiencies and expand production capability. If, however, in future world price peaks are both going to be further apart than in the past and the peaks, when they come, are going to be lower because of the ability of some major producers to expand their export availability very fast, then the ability of some of the world's weaker industries to generate the necessary funds for investment will be curtailed. This can only be expected to trigger a process of concentration in the world's sugar industry which has probably been happening already in any case. (Thus, 90 per cent of the expansion of exports in the 1970's came from the world's four largest exporters).

Vulnerability to depressed world prices

It is a statement of the obvious to say that the pressures posed by depressed world prices will tell on the most vulnerable countries. It is not immediately obvious,

however, which these are. A first indicator may be gleaned from export dependence ratios i.e. those countries where the majority of production is consumed domestically will be the least affected by world prices. But many of the countries which export a lot of their production do so in ways insulated from the world market - principally through the so-called Special Arrangements (US Sugar Quotas, the Lome Convention Sugar Protocol, the Cuba/Socialist Country Agreements). In effect, countries with a high proportion of exports covered by Special Arrangements may also be considered as relatively immune to world market developments. A caveat should be entered here: countries may receive high Special Arrangement and/or domestic prices and yet still have declining industries because of a failure to control production costs (e.g. Venezuela, Jamaica and Trinidad to name but three). Conversely countries may have support prices which are relatively high and yet have efficient industries (the EEC), or again, relatively low support prices and also an efficient industry (e.g. Brazil).

With world prices as they are - well below the costs of production (however defined) of even the most efficient producers - any exports to the world market which are not covered by Special Arrangements have to be at a loss. This can be covered by a subsidy from Government to industry, or by a high domestic consumption price and/or a mixture of both. The point is that Governments have differing abilities and willingness to bear such costs. It is noticeable, for example, that Brazil and Argentina are both already said to be cutting export production because of the costs involved in exporting at current depressed world prices.

The table attached gives three sets of results - the ratio of total exports to production; the ratio of exports under Special Arrangements to total exports; the ratio of exports not under Special Arrangements to total production. On the basis of the proportion of production exported, the 11 countries which export more than 70 per cent of their production are Australia, Barbados, Belize, Cuba, the Dominican Republic, Fiji, Guyana, Mauritius, St. Kitts, Swaziland and Trinidad. But, many of these countries have the majority of their exports covered by Special Arrangements: only Australia, the Dominican Republic, Fiji (just) and Swaziland have under half their exports covered by Special Arrangements.

On a net basis, the Australian industry comes out as being in the most vulnerable position as some 70 per cent of its total production is exported without Special Arrangement protection. Certainly Australia has some protection through its commercial long term contracts which cover a third of its exports: but the prices received are well under Special Arrangement prices and most of the contracts are due, in any case, to run-out shortly. Finally Australia has conventional accounting systems and a Government which has refused, so far, to provide assistance apart from the high domestic support price. It is not surprising that the Queensland industry is in trouble.

Other countries which, on a net basis, may be vulnerable because they have a significant proportion of production exported without Special Arrangements and lack the financial resources to support their industries indefinitely would appear to include Fiji, Nicaragua, the Philippines, Swaziland, Taiwan, Thailand and Zimbabwe.

Of course, should the USA continue on its existing path of reducing the total of its import quotas then many more countries will be in trouble. The 1984/85 US basic quota total was down some 700 thousand short tons, before the announcement of Pepsi and Coke going to 100 per cent HFS usage, which will probably necessitate a further 400,000 short ton cut to about 2.2 million short tons. Discussion among sugar users would suggest that by 1990 the USA, if it keeps its current regulatory system, could be looking at very much smaller import quotas than these levels. In turn, this will face the US Government with an awkward dilemma as to whether it keeps its

quotas at some minimum level and restricts domestic production or emerges as an exporter, or accepts the potentially destabilising effects for some Latin American producers of reducing their Special Arrangement cushion.

The EEC industry, despite exporting a third of its production without the benefit of any Special Arrangements, will undoubtedly be one of the major survivors. This arises in particular because of the industry's technical efficiency: the progress in yields and other indicators of technical efficiency has been remarkable. At the same time the Community has provided a significant degree of support which has helped ensure the necessary investment in technical improvement. Since 1981, of course, the system has been modified (Harris et al, 1983) so that producers have to fund directly the cost of exporting within quota sugar. Nevertheless, despite the size of the producer levies this necessitates with current world prices, Community sugar production has probably reached a stable level at around 12/13 million tonnes wse.

Another major factor which is already altering the shape of the world sugar markets is the trend to white sugar. With the EEC's emergence as a major white sugar exporter, it has meant that white sugar in relation to raw sugar has not shown a full refining margin. As a result, with the bulk of consumption growth coming in the developing world there has not been an incentive to develop new refining industries (apart from the capital costs involved in their creation). According to the International Sugar Organization (Hannah, 1984b) world white sugar imports rose 50 per cent in the five years to 1983 - in terms of raw value a total rise of three million tonnes. Now about a third of sugar entering world trade is white sugar.

It is likely that the swing to white sugar in international trade will continue. On the demand side, the developing countries where the majority of the world's consumption growth will not be able to afford, or will not wish to afford, the costs of setting up new refineries and even may have to run-down some of their existing facilities. On the supply side, the technology now exists for putting white ends on cane mills relatively cheaply. Countries that were traditionally raw sugar exporters are now exporting increasing quantities of white sugar (e.g. Brazil, Cuba and India).

The latest development appears to be proposals to start shipping white sugar in bulk in specially equipped vessels with packaging facilities on board. The objective would be the facility to deliver first class quality white sugars in consumer packs to some importers.

These developments, allied with the structural developments discussed earlier, would appear to suggest an erosion of the scale of port refining in the future. In the USA this has been seen already with first the introduction of import quotas and then the reduction in the size of the total quota. In the longer run, it can only increase the vulnerability of those sugar exporting countries with small scale industries who cannot justify the installation of white sugar facilities.

Some conclusions

i) Even if an ISA with economic provisions had been agreed in June 1984, it is unlikely that it would have had much influence on the fundamental forces affecting the world sugar economy.

ii) Thus, Governmental support policies would not have been affected. It is these policies, however, which by insultating producers and consumers from world markets have contributed to the lack of response to current depressed world prices. Governments by continuing with expansion projects currently, despite the existing processing overcapacity in the world are contributing to the maintenance of depressed world prices.

iii) Again, it is the effect of Governmental policies in encouraging the erosion of sugar demand in the developed world by starch sweeteners that has slowed the growth in world consumption and made the remaining growth more income and price elastic because of its concentration in the developing world.

iv) Governments are turning to alternative uses for cane - particularly in Latin America. This has made cane supply more flexible because some area can be switched from ethanol production to sugar production if world sugar prices show signs of a forthcoming price surge.

v) It is likely that the world sugar cycle will continue to exist in the future, but the periods of low prices will be elongated because of the impact of Governmental policies in insulating their domestic sugar industries and consumers from the world market and because of their encouragement for further processing capacity due to their self-sufficiency objectives. The peaks in world sugar cycles will be relatively lower than in the past because of the more flexible supply response available from the EEC and Brazil in particular.

vi) Lower world price peaks will have significant structural implications as industries traditionally have relied on these to provide funds for reinvestment. The most vulnerable industries will be those which are relatively weak economically, do not have financially strong Governments to support them and have a low proportion of their exports covered by Special Arrangements. Again those raw sugar producers will prove vulnerable which are on too small a scale to justify the necessary investment in white sugar facilities which the structure of the world market is increasingly going to require in the future.

vii) A significant further concentration of the world's export capacity among the larger exporters is likely as a result of the above factors.

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Indicators of countries' apparent susceptability to a period of sustained depressed world prices

	Proportion of Production[a] Exported	Proportion of Exports under Special Arrangements[b]	Exports not under Special Arrangements as % of production
Argentina	36.66%	16.65%	30.56%
Australia	75.95%	7.25%	70.44%
Austria	21.14%	0.00%	21.14%
Barbados	83.62%	92.26%	6.47%
Belize	93.24%	64.98%	32.65%
Bolivia	15.80%	51.07%	7.73%
Brazil	30.34%	12.14%	26.66%
Colombia	19.97%	21.46%	15.69%
Congo	63.90%	143.38%	0.00%
Costa Rica	29.35%	82.14%	5.24%
Cuba	92.20%	74.38%	23.62%
Dominican Republic	74.14%	45.56%	40.36%
Ecuador	7.10%	144.69%	0.00%
El Salvador	30.94%	102.60%	0.00%
EEC	36.81%	0.00%	36.81%
Fiji	91.51%	49.56%	46.16%
Gabon	14.79%	492.19%	0.00%
Guatemala	50.92%	39.07%	31.03%
Guyana	86.84%	77.23%	19.77%
Haiti	13.59%	172.63%	0.00%
Honduras	44.61%	48.74%	22.87%
Hungary	6.17%	0.00%	6.17%
India	5.91%	6.31%	5.54%
Ivory Coast	42.69%	19.07%	34.54%
Jamaica	69.86%	109.38%	0.00%
Kenya	7.87%	16.01%	6.61%
Madagascar	22.81%	96.71%	0.75%
Malawi	55.53%	53.12%	26.03%
Mauritius	87.70%	95.96%	3.54%
Mexico	0.37%	109.09%	0.00%
Mozambique	30.98%	76.89%	7.16%
Nicaragua	42.02%	5.48%	39.72%
Pakistan	0.00%	-	0.00%
Panama	56.23%	55.72%	24.90%
Papua New Guinea	18.89%	500.22%	0.00%
Paraguay	7.34%	182.90%	0.00%
Peru	10.24%	176.66%	0.00%
Philippines	49.71%	26.09%	36.74%
St. Kitts-Nevis-Anguilla	92.58%	91.06%	8.28%
South Africa	36.85%	7.26%	34.17%
Swaziland	90.48%	46.14%	48.73%
Taiwan	39.00%	9.62%	35.25%
Tanzania	9.40%	101.30%	0.00%
Thailand	67.48%	2.10%	66.06%
Trinidad and Tobago	71.86%	151.56%	0.00%
Uganda	0.00%	-	0.00%
Uruguay	4.96%	225.00%	0.00%
Venezuela	0.00%	-	0.00%
Yugoslavia	1.17%	-	1.17%
Zimbabwe	50.32%	26.58%	36.95%

(a) Average production and exports for the three years 1981 to 1983.

(b) 1984/85 US Import Quotas, the EEC's Lome Convention Quotas and average Cuban Special Arrangement exports for 1981 to 1983.

WORLD OUTLOOK 1985: BEEF-PORK-POULTRY

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OUTLOOK '85



INTRODUCTION

Over the last quarter of a century, beef, pork and poultry have undergone substantial changes in production, trade, and consumption. A little history will set the tone for where we are today, and coupled with current events, where we may go tomorrow. Predictions are a little difficult. Oil embargoes, economic recessions, changes in governments and policies, even the weather, make predictions uncertain. Even if I had stood here 5 years ago and made predictions, I could not have foreseen the major events that were to affect our future. Even predicting a year ahead gets a little tricky. Yet, some trends are evident.

World beef consumption has leveled off, pork consumption is only creeping upward, and poultry consumption is not increasing as fast as 5 years ago.

BEEF

World beef consumption reached its peak about 1975. In 1960 the world consumed about 25 million tons of beef. By 1975, that total had leveled off to about 40 million tons. In 1980, this quantity remained at about 40 million tons and in 1985 is expected again to remain at about 40 million tons. Large beef supplies in 1984 among the world's exporting nations in relation to static world demand have resulted in a decline in world beef prices. For 1985, supplies will continue to exceed demand and dampen prices.

World beef exports in 1984 have been dominated by the European Community, Australia and Brazil. In 1984 the European Community will export about 780,000 tons or 22 percent of the world beef market; Australia about 680,000 tons or 18 percent of the market; and Brazil about 600,000 tons or 17 percent of the market. Added together, these three countries will account for over 50 percent of world beef exports in 1984. New Zealand will likely rank fourth at about 340,000 tons, followed by Argentina at about 270,000 tons and Uruguay at about 175,000 tons. While quantities being exported by the big three are large, no one country completely dominates the world market. Competition among all of these countries will continue to keep a downward pressure on beef prices in 1985.

The situation in the European Community, while probably well known, is worth repeating. Since 1973, EC beef production has increased about 22 percent, while consumption has increased only about 2 percent. During this period, the EC moved from a position of a net beef importer to a net beef exporter, in fact, the world's largest beef exporter. EC exports during this period

increased over 200 percent, while imports declined about 64 percent. For 1984, exports are expected to reach 780,000 tons, and to be only slightly lower in 1985. In addition, the EC also has a large stock level of beef resulting from a pricing policy that encourages production. A program initiated by the EC last April to reduce dairy cow numbers and control dairy production is also aggravating the situation. In addition, there have been no corresponding programs to increase domestic beef consumption. EC intervention stocks of beef continue to grow, and are expected to reach 650,000 tons at the end of this year.

Availability of very cheap EC beef is apparently stimulating private Egyptian traders to step up imports. EC offering prices are reportedly running at $800-$900 per ton CIF, depending on the cut. These beef prices are undercutting even subsidized poultry imports from Brazil and Denmark, which most recently were purchased for $1,000-$1,050 per ton C and F.

The United States accounts for only about 3 percent of world beef exports, but when compared with other beef exporting countries, its share is growing. In the early 1960's, US beef exports averaged about 20,000 tons per year. This grew slowly to about 30,000 tons by the early 1970's, but will average about 125,000 tons in the early 1980's. U.S beef exports are expected to be about 145,000 to 150,000 tons in 1985 based mostly on the strength of a recently signed agreement with Japan.

As for imports, the United States is the largest market for foreign beef. However, imports have leveled off in recent years as a result of the U.S. Meat Import Law, agreements reached with some major exporting countries to control imports, and lower cattle numbers in the major exporting countries. In the early 1960's, the United States imported about 560,000 tons each year. By the early 1970's, imports were up to an average of about 830,000 tons per year and averaged almost 990,000 tons in the late 1970's. This year the quantity has declined to about 800,000 tons, still a large figure. While imports may be slightly higher in 1985 compared to 1984, the U.S. may not be as good a market for imported beef during 1985 as it was in the late 1970's.

On the live animal side, imports from Canada are of special note. U.S. slaughter cattle imports from Canada in the 'over 700 pound range' through September of this year totaled about 190,000 head compared to about 175,000 head last year. Imports during July, August and September were well above the same months in 1983. Factors contributing to this increase were weather conditions, the exchange rate difference, and a strike at Canadian slaughter plants this summer. The strike has been settled and a slowdown in slaughter cattle imports is expected.

PORK

Excluding China from the statistics for a moment, world pork consumption is still showing some relatively minor gains, but its growth leveled off about 1980. Increases since that time have not been as dramatic as the increases of the later 1970's. In 1980, world pork consumption (excluding China) reached 36.4 million tons. Since that time consumption has not exceeded the expected 1984 quantity of 37.4 million tons and is not expected to be much higher in 1985.

China is the largest producer and consumer of pork in the world. Adding China to the total raises world pork consumption in 1984 from 37.4 million tons to 50.4 million tons and makes total world pork consumption higher than total world beef consumption of about 40 million tons. (For comparison, China would add less than a half million tons to total world beef consumption in 1983 or 1984.)

With China's recent initiative to improve its international relations, and with its proximity to the large pork markets of Japan, Singapore and Hong Kong, China also stands as a potential international exporter and competitor for pork products to the Far East markets.

World pork consumption continues to increase, but the rate has been lower in recent years. While the Western Hemisphere, Eastern Europe and Australia have had an overall decline in consumption, Mainland China and the USSR have both increased consumption and tend to keep the numbers from actually falling. In line with consumption, hog numbers have also gone flat, holding around 700 million head (including China) for the early 1980's.

U.S. hog and pork imports from Canada continue at record levels, and this has been a concern of the U.S. industry. A slowdown in imports after the Canadian slaughter industry strike has not, as yet, taken place. U.S. imports of pork from Canada next year may be a little lower, but not by much.

The National Pork Producers Council filed a formal petition on Friday, November 2, seeking countervailing duties on live swine and fresh, chilled and frozen pork products entering the United States from Canada. The petition was filed simultaneously with the Department of Commerce (DOC) and the International Trade Commission (ITC).

U.S. pork producers contend that various subsidies provided Canadian pork producers by their federal and provincial governments is unfair competition and amounts to a "no risk" incentive for producers to raise more hogs and shift their surplus production to the U.S. open market.

Under countervailing duty procedures, the ITC will first determine whether U.S. pork producers have been injured or threatened with injury as a result of Canadian pork imports. If the Commission's preliminary decision is affirmative, the DOC has until late January to make its own preliminary determination as to whether government payments to Canadian producers are, in fact, subsidies.

A final determination on countervailing duties will not be made until Spring, 1985. However, if the preliminary determinations are affirmative, importers will be required, beginning in late January, to make a deposit or post a bond to cover countervailing duties that may be imposed on these products.

POULTRY

Since 1964, world poultry consumption has almost tripled. However, over the last 4 years its rate of increase has slowed to about 3 percent per year, compared to a rate of about 6 percent per year during the latter 1970's. The world consumed about 8 million tons of poultry in 1964, about 15 million tons in 1974, and is expected to consume about 24 million tons in 1984. OPEC countries, which have been the major poultry importers, have seen their trade balances decline since 1980. These countries have also started poultry production operations of their own that are beginning to come on line. As a result of these trends, poultry exporting countries have found their markets somewhat curtailed.

U.S. poultry exports have been hard hit in recent years. After reaching 375,000 tons in 1981, the quantity declined to a 240,000 ton average for the 1982-83 period. Exports are expected to be about 200,000 tons in 1984, and may be even lower next year. Much of the decline has been attributed to the EC and Brazil where subsidized poultry products have cut the U.S. out of the Middle East market. Now that the Middle East countries have entered a period of reduced foreign earnings from oil, and imports have been reduced, the EC and Brazil are turning now toward the Far East markets as a target for their exports.

Brazil, for example, has expanded its poultry exports from 70,000 tons to 270,000 tons since the late 1970's, even though its domestic consumption also has increased from 850,000 tons to 1.25 million tons. France also has been a major factor in the world poultry market, although its future is uncertain. Recently, one of France's major exporters went bankrupt, and new owners have plans of concentrating on the domestic market plus the USSR and Eastern Europe.

The USSR, in addition to beef and pork, also has increased its poultry imports. USSR poultry imports, after averaging 100,000 tons in the late 1970's, is expected to reach about 225,000 tons this year, and may reach 250,000 tons next year.

Hungary's poultry production, which averaged about 300,000 tons in the late 1970's, has averaged 360,000 tons for the early 1980's. While consumption has increased from 190,000 to 200,000 tons, exports have received most of the emphasis, increasing from 120,000 to 170,000 tons over the same period. Hungary now exports about as much as it consumes. Its major markets are the USSR and Middle East countries.

SUMMARY

While the picture I have painted here for beef, pork and poultry may look a little pessimistic to some, there are bright spots on the horizon. Populations will increase. Increased production will be needed to feed more and more people. World economic conditions may improve faster than expected. Perhaps what we are seeing is the lull before another upturn. Given all of these factors, and adding up the statistics, we see continued weak demand for world beef in 1985, but we also see a slight improvement in world pork and poultry consumption. Overall production, trade and consumption in the world is still strong and the potential for increase is still there.

RED MEAT OUTLOOK

OUTLOOK '85

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Sharply higher feed costs and only slightly higher live animal prices continued to keep producers' returns unfavorable throughout most of the year. Unfavorable returns, financial stress, and spot drought conditions resulted in continued herd liquidation.

Although real disposable personal income grew at a very high rate this year, red meat and poultry production was large tempering price increases. However, in recent years real income per household has not kept pace with aggregate income growth. Herd liquidations in 1984 will result in lower red meat supplies in 1985 and modest price strength.

Factors Affecting the Red Meats Industry

The Economy

The economic recovery which started in late 1983 continued through 1984. The Real Gross National Product (GNP) increased at an annual rate of nearly 7 percent, compared with 3.7 percent a year ago. In 1985, the economic growth is likely to slow down to an annual rate of about one-half of that of the 1984 rate. The economic growth rate is expected to be slower in the second half of the year than in the first half.

Real disposable personal income is expected to rise nearly 7 percent from year ago levels. In 1985, real disposable personal income may rise at about one half of the 1984 rate, with a slower rise in the second-half of the year. The average rate of unemployment in 1984 is projected at around 7.5 percent, down sharply from last year. In 1985, the unemployment rate may be about the same as 1984. Rising real disposable income and employment stability along with lower meat supplies should strengthen meat prices and as a result boost live animal prices at least through first-half 1985. A slowing economy and larger meat supplies in the second half may result in some price weakness.

Feeding Costs to Decline

Again this year, a moderate rate of inflation has been favorable for livestock producers. Prices paid by farmers for non-farm originated items rose nearly 3 percent in 1984 over 1983, and are expected to rise 2 to 4 percent next year. Livestock producers may be faced with a slight rise in interest rates in 1985. For all of 1985, interest rates may be a percentage point higher in 1985 than in 1984. The rate of general inflation as measured by the GNP Implicit Price Deflator rose nearly 4 percent in 1984 and may rise about 5 percent in 1985.

The 1984 corn crop is estimated at 7.5 billion bushels, up 81 percent from last year's drought and program reduced crop. With total use up about 9 percent, the 1984/85 carry over is estimated at 1.125 million bushels, up 43 percent from 1983/84. So, the 1984/85 average farm price is projected at $2.65 to $2.95 per bushel, compared with $3.20 in the 1983/84 crop year.

Sorghum grain production is estimated at 813 million bushels in 1984, up 70 percent from last year. Sorghum prices averaged $2.75 in 1983/84. In 1984/85, sorghum prices are expected to average $2.40 to $2.55 per bushel. Feed grain prices are expected to move in a normal seasonal pattern in 1984/85, i.e., lowest at harvestime and highest in the summer.

Soybean production is estimated at 1,902 million bushels in 1984, up 16 percent from last year. Soybean meal carryover is estimated at 420 thousand short tons in 1984/85, up 65 percent from 1983/84. So, soybean meal prices are expected to average $145 to $165 per short ton in 1984/85, down from $188 in 1983/84.

Over much of the country, forage supplies are better than a year ago. For the 48 contiguous States, the pasture and range feed conditions index on November 1 was 74, 1 point above last year, but 1 point below the 1973-82 average for the date. Short forage conditions this fall continue in Central Texas and Oklahoma, but conditions have moderated from the "extreme" conditions of the previous months. Portions of Northern Montana and Western North Dakaota remain in an extreme drought condition. The other pocket of extreme drought is found in Northern Florida and Central Georgia. The 1984 hay crop is estimated at 154 million tons, up 9 percent from last year and the highest on record. Although the hay crop was record large, hay stocks have been pulled down by supplemental feeding this summer and fall.

Hog production costs have remained relatively high in 1984 because of continued high feed costs. Feed costs for hogs marketed this fall are about the same as those last fall. However, feed costs are now declining as feed grain and soybean meal prices have dropped sharply since summer. Costs of production in 1985 are expected to decline below 1984 levels due to lower feed costs.

Feeding costs for cattle being marketed this fall are slightly higher than a year earlier. However, feed costs should continue to decline into the next year but may be largely offset by higher feeder cattle prices due to reduced supplies and expected higher fed cattle prices.

Costs of producing feeder cattle have been held down by moderation in the general inflation rate. However, in 1984 tighter grain and forage supplies held feeding costs relatively high while pressuring feeder cattle prices. However, prices were higher in 1984 than in 1983. Increasing grain supplies will lower feed costs and help strengthen feeder cattle prices ,thus, resulting in higher returns to cow-calf operations in 1985.

Hogs

Herd Liquidation Continues

With only two months of farrow-to-finish returns above breakeven over the past year, producers have continued to cut back production. The September Hogs and Pigs report confirmed that the cutback continued though summer. Hog prices averaged less than previously expected, but feed costs moderated in the summer. Producers on September 1 indicated intentions to have 5 percent fewer sows farrow in September-November than a year ago. This was a smaller decrease a than the 7 percent decline indicated in June. Producers as of September 1 intended to have 1 percent fewer sows farrow during December 1984-February 1985 . The actual farrowings for September-November and second intentions for December-February will be announced in the December Hog and Pigs report scheduled to be released December 20. If producers carry out their intentions of having fewer sows farrow during September 1984-February 1985, pork production will decline on a year-over-year basis at least through spring 1985. Smaller pork production along with lower beef output because of a reduced herd, should result in higher hog prices. However, greater broiler production will be a price-weakening factor.

Fourth Quarter Production to Decline

Commercial hog slaughter in the fourth-quarter is projected at 22.1 million head, down 9 percent from a year ago. Fall hog slaughter is largely drawn from the inventory of market hogs weighing 60-179 pounds on September 1, which was down 8 percent. Last fall producers were liquidating the breeding herd. This fall producers may hold the breeding herd relatively stable. The average dressed weight will probably be about the same as last year's 173 pounds. So, commercial pork production is expected to total 3,825 million pounds, down 9 percent from a year earlier.

1985 Production Unchanged from 1984

Commercial slaughter in first-quarter 1985 is projected at around 21 million head, 3 to 5 percent below a year earlier. However, the September 1 inventory of market hogs weighing under 60 pounds suggests a slightly lower number. But the projected slaughter is in line with the 4-percent smaller June-August pig crop. Lower feed costs may encourage producers to feed hogs to heavier weights, as a result the average dressed weight may rise 1 to 3 pounds over last years' 171 pounds. Commercial pork production may total 3,625 million pounds, down 3 percent from 1984.

The spring slaughter is drawn from the September-November pig crop. If producers follow their September 1 intentions and the number of pigs per litter is about the same as in June-August, the pig crop would be 2 percent below a year ago. Although feed costs have moderated, the average dressed weight is expected to drop 1 to 3 pounds below 1984's 174 pounds. In spring 1984, producers may have fed hogs longer to sell then on an expected upturn in the market. However, the price increase did not occur until late June. Commercial production may total 3,600 million pounds, down 2 percent from a year ago.

Hog slaughter in second-half 1985 is expected to total 42.6 million head, up 1 to 3 percent from 1984. The second-half slaughter will be drawn largely from the December-May pig crop, which is projected to be 1 to 3 percent larger than a year earlier. The average dressed weight is expected to remain about the same as in 1984. So, commercial production may total about 7.35 billion pounds, up 2 percent from 1984. For all of 1985, commercial pork production may total about 14.6 billion pounds, about the same as in 1984.

Cattle

The inventory of all cattle and calves on January 1, 1985 is expected to show a continued decline; perhaps down 2 to 3 percent. The breeding herd continues to be eroded. On July 1, beef cows totaled 38.5 million head, down 1 percent from last year and down 4 percent from 2 years earlier. Cow slaughter in 1984 is projected to be about 11 percent over last year. In addition, the number of beef replacement heifers on July 1 was down 5 percent. So, the declining trend in cattle inventories will likely continue in 1985, the third consecutive year.

Spot drought conditions and financial difficulties have plagued the beef cattle industry for the past couple of years. After producers adjusted cow herds because of drastically reduced forage supplies last fall, severe winter storms necessitated increased supplemental feedings and further herd reductions. Some additional beef cows may have been slaughtered late last fall as producers became apprehensive about lower cull cow prices in first-half 1984 resulting from the dairy program. Cow slaughter is expected to drop sharply in 1985 as the new grazing season approaches. A lower inventory, higher cattle prices and improved forage conditions are expected to result in sharply lower slaughter. In addition, nonfed steer and heifer slaughter should also decline sharply from 1984 levels as demand remains strong for the reduced feeder cattle supply. However, nonfed steer and heifer and cow slaughter could exceed current expectations if financial problems on crop/livestock operations continue to warrant further reductions of cattle herds to generate cash for spring planting.

Feeder Cattle Supply Declines

The supply of feeder cattle outside feedlots on October 1 was down 3 percent from last year. Calves, which represent 82 percent of the supply, were down 2 percent, while yearlings supplies were down 7 percent. The lower feeder cattle supplies were due largely to a declining calf crop and continued larger feedlot placements. However, the feeder cattle supply likely has been increased by larger sales of heavier heifers in late summer through fall. These heifers probably had been retained to rebuild the breeding herd.

Sharply lower grain prices and prices for Choice fed steers will probably encourage larger placements of lightweight feeder cattle in 1985. The already lower feeder cattle supply will get even tighter because of increased placements, smaller calf crop, and perhaps some modest retention of heifers late in the year for the breeding herd. Retention of heifers to expand breeding herds, of course, depends upon the strengthing of feeder cattle prices as well as forage and pasture conditions in 1985.

Beef Production to Rise Slightly in 1984

As dairy producers culled cows in accordance with USDA's 1984 dairy diversion program, first-quarter beef production rose 3 percent above year-earlier levels. Cow slaughter for the period was 22 percent over first-quarter 1983.

Beef production during the second quarter was 5 percent above a year earlier. At the same time, cow slaughter, at 18 percent over the 1983 level accounted for a large part of the production increase. However, in contrast to the first quarter, the largest share of second-quarter cow slaughter was beef cows as beef producers adjusted to already tight forage supplies compounded by a cold, wet spring.

Expectations for 1984 beef production were modified in mid-summer as producers continued to reduce herds in accordance with drought-reduced forage supplies and financial problems on mixed crop/livestock enterprises.

Slaughter levels had been expected to hold below the large drought levels of 1983. Fed slaughter dropped below year ago levels during the third quarter.

The October 1 Cattle on Feed report indicated a 6 percent rise in the number of cattle on feed. Placements during the third quarter rose 12 percent over a year-earlier, with heifers accounting for most of the increase. Those heifers placed on feed may have been earmarked in July for herd replacements, but were sold later in the year due to lack of forage and/or the need to generate cash. These heavier weight heifers may be marketed in the last part of fourth-quarter 1984 and first-quarter 1985. In the fourth quarter, nonfed slaughter will be down from last year, while fed slaughter may rise moderately. For the fourth-quarter, commercial beef production may be up slightly from 1983 levels. For all of 1984, commercial beef production is expected to be about 2 percent over a year ago.

Beef Production to Decline in 1985

Beef production in 1985 is expected to decline 3 to 4 percent from 1984. Because fed beef production will increase moderately, the decrease in total beef production will result from a sharp decline in cow slaughter, particularly beginning in late winter, and lower nonfed steer and heifer slaughter. Fed beef production increases will be largest in the first and third quarters. Fed cattle marketings as a porportion of total slaughter is expected to increase in 1985. As a result, dressed weight will likely increase.

Lamb and Mutton

Commercial lamb and mutton production for all of 1984 may decline slightly from last year--the first decline in four years. Extreme drought conditions in the Edwards Plateau of Texas, over the past two years, caused a sharp liquidation of the breeding herd due to a lack of forage. This region accounts for about a fifth of U.S. sheep production. However, forage conditions have improved this fall. Lamb and mutton production in 1984 is forecast at 363 million pounds, down 1 percent from 1983. In 1985, production is expected to total 320 million pounds, down 12 percent from 1984. The decline in production is due to herd liquidation in 1982-84 and some possible rebuilding in 1985.

Per Capita Red Meat Consumption to Decline

Per capita red meat consumption in 1984 is expected to total 143 pounds (retail-weight basis) down a pound from 1983. The decline occurred in pork consumption, which declined a pound from 1983's 62 pounds per capita. Beef consumption remained steady at 79 pounds while veal and lamb and mutton consumption remained about unchanged at 1.5 pounds. In 1985, red meat consumption is expected to drop about 5 pounds to 138 pounds per capita. Beef consumption may drop 4 pounds to 75 pounds per capita and pork consumption may drop another pound to 60 pounds per capita. Veal and lamb and mutton consumption may drop a fraction of a pound.

Red Meat Prices to Rise Moderately in 1985

Red meat prices in 1985 may rise only moderately over 1984. However, there will be some variation among the quarters. The sharpest year-over-year price increases will be in the fourth quarter, while the smallest increase will be in first quarter 1985.

Hog Prices to Increase Slightly in 1984

Hog prices at the 7 major markets are expected to average $48 to $49 per cwt in 1984, compared with $48 in 1983. Prices in fourth-quarter 1984 are expected to average $45 to $48 per cwt, compared with $42 last year. Most of the increase is from lower pork supplies with some support from tighter turkey supplies during the holiday season. Sharply higher turkey prices are making hams more attractive to feature during the holidays.

Prices in first-quarter 1985 are expected to average $48 to $52 per cwt, compared with $48 in 1984. Moderately lower beef production and a continuing strong economy will be price-strengthening factors, but rising broiler production will be a price-weakening factor. In second-quarter 1985, hog prices may average $48 to $54 per cwt, compared with $49 a year ago. Cold storage stocks are projected to be lower than in 1984 and will not be as burdensome on the market as was the case in 1984. In addition, nonfed steer and heifer, and cow slaughter will be down sharply, which helps support pork prices for use in processed meats.

Hog prices in the third quarter may average $51 to $55 per cwt, compared with $51 in 1984. Continuing lower beef production and a strong economy should support hog prices. In addition, frozen stocks are not expected to be the problem they were in 1984. However, continuing rising poultry production may temper price increases.

Hog prices in fourth-quarter 1985 are expected to average $48 to $52 per cwt. Lower beef production, especially nonfed, will be supportive, but continuing high poultry production will pressure prices.

Pork Prices to Rise

Pork prices in 1983 are expected to average around $1.63 a pound, down 4 percent from a year ago. The farm-to-retail spread averaged in the high 80-cent range, compared with the low 90-cent range last year. Given the moderate price rise expected for marketing goods and services, the farm-to-retail spread may rise to near 1983 levels in 1985. Retail pork prices are expected to average $1.70 to $1.75 a pound in 1985. Although the average price will be higher than in 1984, it still may be lower than 1982's $1.75 a pound.

Fed Cattle Prices to Rise, But Remain Steady Throughout the Year

Choice fed steer prices at Omaha in 1984 are expected to average about $65 per cwt, up nearly $3 from last year. After peaking during late winter, fed steer prices declined in each of the succeeding quarters as large beef supplies in the first-half of the year pressured prices. In the third-quarter, larger than expected nonfed cattle slaughter weakened prices as did larger pork supplies and burdensome cold storage stocks. Steer prices did not benefit as much as would have been expected from the strong economy, part of which can be explained by the relative flat growth in per household income.

Lower beef production supported by less pork production and a relatively strong economy should result in higher fed steer prices during 1985. After increasing though spring with prices peaking near $70, Choice fed steer prices may decline seasonally in the second half of the year and average $65 to $69 per cwt for the year.

Feeder Cattle Prices to Rise Above Fed

Feeder cattle prices in 1984 averaged about $65 per cwt, about a $1 more than in 1983. Prices were pressured this year by relatively high feed costs and by herd liquidation. For 1985, lower grain prices and improving fed cattle prices should encourage cattle feeding activity to continue near current levels. As cattle feeders bid for tighter feeder cattle supplies, feeder cattle prices should improve and average $67 to $71 per cwt. Prices should improve through spring peaking in the lower $70's, then decline slightly through the remainder of the year. Net placements for all of 1985 may be up 1 to 3 percent.

Utility cow prices are expected to average about $40 per cwt in 1984, up a $1 from 1983. Cow prices held up well this year despite the 11 percent increase in slaughter. Part of the increase in slaughter was due to the dairy diversion program, but the bulk of the increase was from beef herd liquidation due to poor returns to cow-calf operators, tight forage supplies and financial difficulties. Cow prices are projected to average in the low $40's in 1985.

Cow slaughter is expected to decline sharply in 1985 due to improved forage conditions, expiration of the dairy program, and improved returns to cow-calf operations, thus lending support to higher cow prices. The improved returns should encourage some heifer retention next fall or at least stabilize the inventory. However, some producers may continue to sell cows through spring to raise cash for spring planting expenses.

Retail Beef Prices to Rise

Retail beef prices are expected to average about $2.40 a pound, about the same as in the last 4 years. In 1985, retail beef prices may rise 2 to 4 percent from 1984 levels with most of the strength occurring during the second half of the year. Farm-to-retail spreads in 1984 averaged slightly over $1 a pound, about the same as in the past 2 years. Spreads are expected to average only slightly higher in 1985.

Lamb Prices to Rise

Choice lamb prices at San Angelo in 1984 are expected to average $62 to $63 per cwt, compared with $58 in 1983. In 1985, Choice lamb prices are expected to average $64 to $69 per cwt. In second-quarter 1985, lamb prices may average the highest for the year--in the high $60's to low $70's per cwt. In the other quarters, prices may average in the mid $60's.

POULTRY & EGG OUTLOOK

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Several positive influences suggest poultry and egg producers may continue expanding production in 1985. Feed costs in 1985 are expected to be below first-half 1984. The general economy is expected to continued expanding but at a slower rate than in 1984. Total red meat supplies may decline in 1985, even though pork production may increase late in the year.

Factors Affecting the Poultry Industries

Feed Costs

Acres planted to corn and soybeans increased sharply from last year and crop production reports suggest plentiful grain supplies. In addition, global coarse grain supplies in 1984/85 are expected to be large--the largest on record. Thus, export sales increases are expected to be held down despite lower U.S. grain prices, especially with the strong U.S. dollar. Therefore, U.S. stocks of corn are expected to be rebuilt resulting in continued lower corn prices.

During 1985, feed ingredient prices will likely be much weaker than in early 1984. The farm price of corn averaged about $3.20 a bushel in 1983/84, but may average $2.65 to $2.95 in 1984/85, above the loan rate of $2.55. During the 1984/85 marketing year, prices for soybean meal (44 percent protein) at Decatur are expected to average $145 to $165 per ton, down from an expected $188 per ton in 1983/84.

The Economy

Preliminary data indicate the Gross National Product (GNP) was up 2.7 percent in the third quarter from a year earlier but down from the 10 and 7 percent increases in the first and second quarters respectively. Slow growth in the rest of 1984 increases the likelihood of continued recovery in 1985 by reducing future problems caused by increases in inflation, interest rates, and too-rapid consumer debt expansion.

The strong economy has supported stronger poultry and egg prices. Broiler prices in particular seem stronger than in the past when the economy was weaker. This may be the result of increased sales by the fast-food chains almost all of which have added chicken to their menus.

In addition, many poultry firms are doing more further processing and producing convenience foods. With more multiple income households as people are able to return to work, sales of convenience foods and restaurants sales are increasing providing more sales for the poultry firms that expanded into these products. With the economy expected to continue expanding in 1985, demand for poultry and eggs should remain strong.

Broilers

With prices of feed ingredients weakening and output of red meat down, broiler producers are expected to increase production from last year during the rest of 1984 and during 1985. The increased output may yield prices below a year earlier this winter and during 1985. With lower feed costs, net returns are likely to be near to slightly above breakeven.

Production to Increase

Production of broiler meat in Federally inspected plants during first-half 1984 was 1 percent above the 6.3 billion pounds produced in 1983. Unprofitable operations in 1983, and prospects of continued high feed costs and increased red meats supplies in first-half 1984 prompted broiler producers to slow expansion of broiler output. These same factors were reversed in second-half 1984 and broiler output expanded.

During the second and third quarters of 1984, producers might have set even more eggs if the hatchery supply flock had not been reduced when costs were being cut last year. Thus, producers were forced to hold their hens a few days longer to obtain additional hatching eggs. An inventory of broiler hatchery supply hens is not available, so the cumulative pullet chick placements 7 to 14 months earlier are used as an approximation of the size of the flock. These cumulative placements have been below last year through most of 1984 and will remain below until the fourth quarter. During fourth-quarter 1984 cumulative placements will be slightly above last year, but by April 1985, these placements will be 8 percent above 1984.

With the cumulative placements below a year earlier in January through October 1984, producers appear to have been less selective in putting eggs in incubators. Thus hatchability of the eggs has been slightly below last year through August 1984. Therefore, the 5 to 6 percent increase in eggs set has resulted in only a 4 percent increase in chicks placed for third-quarter slaughter the same as the actual increase in slaughter. Average weights were up with the cooler than normal summer. With heavier birds being slaughtered, output in the third quarter was up 6 percent from the 3,135 million pounds produced in 1983. Since demand declines seasonally in the fall, producers normally reduce production from the summer levels. Thus even with smaller cumulative placements than a year earlier, producers will likely have plentiful supplies of hatching eggs and are expected to increase output 8 to 10 percent from 1983's 2,917 million pounds.

Wholesale broiler prices thus far in second-half 1984 have been strong considering the increased production and producers will likely respond to the higher prices. Output in 1985 may be up 4 to 6 percent from 1984's expected production.

85' Prices to Slip

Wholesale prices of broilers in the 12 cities declined during 1984 as supplies increased relative to last year. Prices were very strong in first-quarter 1984 when the number of birds slaughtered was below last year and avian influenza outbreaks caused concern that supplies would be low. Both the weight and number of birds slaughtered increased in the spring and summer quarters, leading to summer wholesale prices the same as last year. During fourth-quarter 1984, prices have been below last year both because of larger production and the absence of avian influenza.

If broiler output increases as expected, prices during the first three quarters of 1985 will likely average below 1984. During 1985, wholesale broiler prices may average 49 to 53 cents per pound, down from 53 to 56 cents in 1984. These are still relatively strong prices considering the increased supplies and the volume of total meat available. In years when the general economy was weaker and processed chicken items were not being added to fast food menus, production increases of 4 to 6 percent would have been more consistent with prices in the low to mid-forty cent range.

Turkeys

While production in fourth quarter 1984 will likely be near 1983, turkey production is expected to increase in 1985. Prices for turkeys should remain near 1984 through mid-1985 then weaken relative to the previous year as total meat supplies rise.

Production

Output of turkey meat from Federally inspected plants during January through September 1984 totaled 1,796 million pounds, 8 million pounds less than in 1983. The number of turkeys slaughtered was down 2 percent but the average liveweight was up 2 percent. Based on turkey poults placed that could be slaughtered in the fourth quarter, output is expected to be near to 2 percent below the 750 million pounds produced in 1983.

Turkey producers are likely to expand production sharply in 1985. The prospects of lower feed costs, smaller supplies of red meats and favorable returns in second-half 1984 are likely to encourage more production. Production of turkey meat in Federally inspected plants is expected to increase 10 to 12 percent in first-half 1985 from 1984's output and 6 to 8 percent in the second-half of the year.

Stocks of frozen turkeys in commercial warehouses have been increasing seasonally but are not as large as in previous years. Fourth-quarter beginning stocks of whole turkey and turkey parts are 10 percent below the 432 million pounds stored in 1983. Stocks are likely to remain below 1983 through the rest of 1984. In addition, with less production in the the fourth quarter, ending stocks should remain below last year's low level. During 1985, stocks of frozen turkey and turkey parts are likely to return to near the levels of 1982.

Prices to Strengthen In 1984

In first-half 1984, prices of 8-to 16-pound hen turkeys in New York averaged 67 cents per pound, about 11 cents above last year. As wholesalers realized that producers were slowing seasonal production gains, prices began to inch up and prices in the third-quarter averaged 72 cents, up from 60 cents last year. On August 1, Poultry Market News changed their wholesale quotes from a New York price to a Northeast price which is reported daily. The commodity pack turkey price and the old New York price are nearly the same according to Market News but a history of both prices is not available. During fourth-quarter, prices have strengthened and may average 86 to 88 cents, up from 69 cents last year.

Even with increased production, prices of commodity pack turkeys in the Northeast will likely remain relatively strong in first-half 1985, averaging 65 to 74 cents per pound, up from 67 cents this year. During second-half with red meats increasing, prices may average 65 to 69 cents, down from 79 to 80 cents this year.

Eggs

Because of strong prices created by wholesalers' concerns over adequate egg supplies when avian influenza was in the news, egg producers with eggs to sell made record returns early in 1984. These favorable returns have encouraged expansion and egg production rose during the third-quarter and will likely rise during the remainder of 1984 and into 1985. Prices will likely weaken because of the larger supplies.

Production to Increase

With high feed prices causing unfavorable returns in 1983, egg producers cut output by selling old hens. Production declined from the year earlier in each quarter -- the quarters through the year were down 1, 2, 3 and 4 percent, respectively. Producers also continued not ordering as many replacement pullets as they had in earlier years. Thus, when avian influenza broke out in Pennsylvania, there were no surplus eggs to limit price increases.

Strong prices resulted in very favorable returns and producers held old hens to increase egg production in the first quarter of the year, but the numbers of hens were still 2 percent below last year. Producers also ordered more replacement pullets and these began entering the laying flocks in May. During first-quarter 1984, egg production was 2 percent below last year but was even with last year in the second quarter. Reduced slaughter of old hens resulted in almost 2 percent more hens on farms during the second quarter than a year earlier but the rate of lay was down. During third-quarter 1984, the number of hens was up 2 percent from last year and the rate of lay was about the same as last year. As a result, egg production was up 2 percent in the third quarter from the 1,399 million dozen produced last year. As more pullets enter the flocks the rate of lay is expected to increase relative to last year and with more hens, egg production should increase. Output in the fourth quarter may be 2 to 4 percent above last year. Since the pullets entering the flocks in second-half 1984 will still be producing in 1985, production is expected to be up 2 to 4 percent in first-half 1985 and even to 2 percent above in the second-half.

Prices to Weaken

Prices for cartoned Grade A large eggs in New York averaged 83 cents per dozen during second-quarter 1984, down from the $1.03 first-quarter average but up from 69 cents last year. A sharp run up in prices prior to Easter accounted for most of the strength. Egg prices averaged 70 cents per dozen in the third quarter, down from last year's 74 cents. With egg production expected to increase, prices during the fourth quarter may average 70 to 71 cents per dozen, down 20 to 21 cents from last year. During first-half 1985, increased production may result in egg prices averaging 64 to 69 cents per dozen, down from 93 cents in 1984. If production increases slow in the second half of 1985, egg prices may average about the same as in second-half 1984.

Retail Prices to Remain Weak

Retail prices for broilers, turkeys and eggs will likely follow wholesale prices, and the price indexes in 1985 will likely be below 1984. The mid-year 1985 strength in broiler prices will likely move the poultry index up in the spring and summer quarters. Even so, the poultry index is expected to average below 1984 during 1985. The index in 1985 would be expected to be even lower but with the index for red meats expected to be above 1984, comparison shopping by consumers should help strengthen the poultry index. In addition, the increase in poultry production will help moderate the rise in the red meat index. While the per capita consumption of red meat and poultry is expected to be down from the last 2 years, consumption will likely still be well above the 1970 to 83 average of 202.8 pounds per person.

Retail prices for eggs are expected to remain at about current levels through first-half 1985, then rise slightly as production increases slow. The consumer price index for eggs was record high in first-quarter 1984 when wholesale prices were also up. As wholesale prices declined with increased production, the retail index also declined. The index in fourth-quarter 1984 is expected to be near the first-quarter 1983 average, back to levels that existed before producers cut production in 1983.

DISCUSSION OF THE LIVESTOCK AND POULTRY OUTLOOK

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OUTLOOK '85

Meat prices have been relatively stable for the past five years. Following the surge in prices in the late 1970's, retail meat prices levelled off, and since 1980 have risen only one-third as much as the overall Consumer Price Index. In fact, from May 1979, when meat prices peaked, to October 1984, the comparison is even more pronounced. Meat prices increased only 5% during that period in contrast to a 48% rise in overall consumer prices. Beef and veal prices in October 1984 were virtually at the same level as in May 1979 while pork prices were up 15% and poultry prices up 16%.

There are essentially two reasons for this relative price stability. First, per capita supplies of red meat and poultry have been record large -- about 209 pounds per person retail weight in the last two years. Second, demand for meat has been weak.

Our speakers this morning have projected that similar conditions will persist. They predict that per capita supplies of total red meat and poultry will be down only slightly in 1985 and suggest that price increases will be modest. Based on the performance of meat markets in recent years it is difficult to argue with this scenario.

But as one of my teachers once told me, whenever analysts agree on a forecast, you can be sure that they are in for a surprise. Hog numbers are down from a year ago, and at the last count, the hog breeding herd numbered 5% fewer than a year ago and 28% fewer than the peak herd in 1979. As a matter of fact one has to go back to 1975 to find a smaller breeding herd. The nation's cattle herd also has declined for three years in a row. The calf crop has declined for four consecutive years. Cow slaughter has been abnormally large this year; about 17% of the cow herd was culled this year indicating a continued reduction in the size of the national herd.

Larger-than-expected supplies of meat in 1984 were essentially achieved by slaughtering a larger percentage of a smaller herd. That trend will of course have to come to an end, most likely in 1985. Both cattle and hog herds are in an oversold condition and as the offtake from those herds reverts to a more normal rate, supplies of meat will fall. How much will they fall? That depends on economic conditions in the farm sector. Profitable conditions are needed to restore the confidence of livestock producers. Higher livestock prices and lower feedgrain and soybean prices will contribute to improved livestock profits in 1985.

Cheaper feed, however, is a double-edged sword. Many livestock farmers also raise crops. Consequently, lower feedgrain and soybean prices may not be an unmitigated blessing. In fact, the general malaise in agriculture and widely-publicized credit problems of a large segment of the farming population have been cited as reasons why livestock slaughter will continue at above-average rates. It is certainly true that financial institutions have been unwilling to extend further credit, forcing livestock producers to sell livestock to achieve necessary cash flow. It may well be that these financial pressures will lead to continued herd liquidation in 1985. But we should realize that high rates of herd liquidation simply cannot be sustained indefinitely.

In addition to smaller herd numbers there are other factors that will affect livestock markets in 1985. First, it is unlikely that cold storage stocks of pork will reach the burdensome levels of last summer. Second, if the U.S. dollar declines in value, then imports of livestock and meat from Canada will most likely decline from the high rates recorded this year. Third, imports of boneless beef will likely remain below the trigger level determined in the Meat Import Act, and that combined with lower domestic cow slaughter could result in significantly higher prices for manufacturing grade beef.

Perhaps the key element of the 1985 outlook relates to demand. Typically meat demand improves during the later stages of economic recovery. Conventional wisdom suggests that during the early stages of economic recovery housing and consumer durables -- automobiles, appliances, furniture, stereos, TV's, and the like -- are the sectors initially benefiting from increased consumer spending.

It is later in the recovery that the meat sector is supposed to benefit as consumers open their purse strings further and revert to the "good life" of eating out and buying more expensive cuts. Gains in employment and increased disposable income should lead to a boost in consumer spending for meat. It has not happened yet; but logic suggests that we are due for an income-generated improvement in demand.

There are, of course, other negative factors which adversely affect demand. The most widely discussed of these, and the most difficult to measure, is the changing tastes and preferences of American consumers. Changing lifestyles, an aging population, concerns about diet and health, are all frequently cited as reasons for a decline in the demand for meat. I would argue, however, that the impact of these factors should be viewed in the context of their long-run influence on meat demand and that they are not all that relevant to short-run market analysis.

This is not to say these factors should be ignored. The challenge for the meat industry is to create an image of meat as a healthful food compatible with today's active lifestyle so as to stem any long-term erosion in demand. But from the standpoint of shorter-term market analysis, economic variables continue to exert a dominant influence on meat demand.

A highly significant economic variable affecting demand is the price of competing proteins. Poultry, clearly, is an important economic substitute for red meat. Declining poultry prices relative to red meat prices during the past few decades have enabled poultry to capture an increasing market share.

The projected large increase in poultry output next year will serve to limit price increases in the red meat market. Even so, the combination of reduced supplies of red meat and the possibility of an income-induced improvement in demand will, in my opinion, establish a firm tone in meat markets next year. The tendency will be for meat prices to strengthen. Stronger meat prices will hopefully be sufficient to restore profitability to the livestock sector and set the stage for renewed growth in herd numbers during the remainder of the 1980's.

DAIRY OUTLOOK

OUTLOOK '85

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World cow's milk production is expected to be down slightly in 1984 and is projected to remain about unchanged next year. The decline in this year's output level has reduced milk available for the manufacture of butter and nonfat dry milk (NDM). In addition, world trade in dairy products increased in 1984 and is expected to enlarge next year. However, despite lower supplies and larger trade, world prices trended lower throughout 1984, as they have since the fall of 1981. Prices in the international markets are likely to continue near current levels next year.

Here in the United States surplus removals (next purchases) by the Commodity Credit Corporation (CCC) are sharply lower. Net purchases from January to November of this year are down by nearly half because of larger commercial disappearance and lower milk marketings (lower production and additional farm use). In 1985, milk production is expected to be up about 1 percent, but farm use will be down, thus, marketings will grow by about 2 percent. Commercial disappearance is also expected to be up about 2 percent, leaving USDA net removals nearly unchanged at about 8.5 billion pounds. The relatively large level of purchases is expected to keep wholesale prices near the lower CCC purchase prices. With lower product prices, pay prices to farmers are likely to be lower, while retail prices remain about unchanged.

World Dairy Situation and Outlook

Milk Production Reduced

Cow's milk production for the 38 major producing countries is expected to decline slightly (0.3 percent) in 1984. Government programs to reduce milk production in the European Community (EC) and the United States are largely responsible for the drop in world output this year. Sharp increases in Oceania were more than offset by declines in the U.S. and the EC. The outlook for 1985 is for world milk production to be nearly unchanged from the 1984 level. More milk is projected for the Soviet Union, India, and here in the U.S. next year. The EC is expected to again reduce production.

The EC declines this year and next are because the quota system appears to be working. Milk production is likely to drop about 2.3 percent this year and a similar drop is expected next year. Farmers in the EC are adjusting by sending cows to slaughter (maybe up to 1 million additional cows during April 1984-March 1985) and reducing yields by feeding less concentrates.

New Zealand's milk production was up sharply in 1984 as increasing dairy cow numbers together with a very favorable season for pasture growth resulted in record output. Milk output in 1985 will likely continue at least near this year's high level. Feed and forage conditions continue to be very good and another increase in cow numbers is expected.

Australian milk output rose substantially in 1984 as pasture conditions were favorable. For 1985 milk production may show a slight decline as cow numbers are declining. The drop in production will likely be moderated as seasonal conditions are good.

Soviet Union milk production during 1984 was less than 1 percent above a year earlier. While first-half output was up over 2 percent, a summer drought reduced feed supplies which resulted in almost no change in production during second-half 1984 from July-December 1983. For 1985, milk production is projected to again rise by 1 to 2 percent. The dairy herd is expected to continue to be held at 1984 levels, while output per cow will rise because of better breeding and other technological improvements.

Butter and NDM Supplies Lower

The decline in world milk supplies in 1984 has impacted on the manufacture of dairy products. Butter and NDM production declined by 2 percent and 7 percent, respectively. World cheese production in 1984 continued to increase, up about 1 percent, but well below the sharp year-to-year gains of recent years. The outlook for 1985 is for butter and NDM output to again decline, while cheese production rises by about 1 percent.

World stocks of cheese and NDM by the end of 1984 are expected to be somewhat lower than a year earlier. Meanwhile, butter stocks are likely to be much larger, with sharp gains in the EC and New Zealand.

World trade of dairy products increased in 1984 and is likely to again rise in 1985, particularly for butter and cheese. However, dairy product prices in international markets have continued weak throughout 1984 and may show little, if any, gain from current levels in 1985 as more than ample supplies of all dairy products will be available for trade next year.

United States Dairy Situation and Outlook

Did the U. S. dairy paid-diversion program work?

It's too early to make a final judgment. On the one hand, we're still producing and marketing about 8 billion more pounds of milk than we will use this year. On the other hand, the program certainly contributed to a reduction in the amount of milk marketed and that was one of the reasons for a sharp drop in surplus removals (purchases) by the Commodity Credit Corporation (CCC). Net purchases from January to November of this year are down 49 percent from the same period in 1983. Purchases are down because marketings are reduced and commercial use is up. Production this year is likely to be about 136 billion pounds, down 4 billion, nearly 3 percent less than last year. Milk marketings are likely to be down even more because of additional farm use. Meanwhile, commercial disappearance (a proxy for retail demand) is expected to be about 126 billion pounds, up nearly 4 billion (3 percent).

Current Price Support Lower

Before looking at the 1985 outlook in detail for supply, use, and price of milk and dairy products, let's review the legislation signed into law last year. That law, entitled the Dairy and Tobacco Adjustment Act of 1983, superseded all dairy provisions of the Omnibus Budget Reconciliation Act of 1982. If you will remember, the 1982 Budget Act was the law allowing the deductions that were held up for a time in court, but finally started on April 16, 1983.

As required by the new law, USDA set the support price for milk at $12.60 per cwt on December 1, 1983. That will be the level of support until September 30, 1985. However, if the Secretary of Agriculture estimates on April 1, 1985, that projected annual CCC purchases would exceed 6 billion pounds, milk equivalent, the support price could be reduced by 50 cents per cwt. An additional 50-cent-per-cwt cut in the support level could be made on July 1, 1985, if annual purchases were projected to exceed 5 billion pounds, milk equivalent.

The law includes a mandatory deduction of 15 cents per cwt for dairy product promotion, research, and nutrition education, but allows up to 10 cents credit for qualifying state or regional promotion programs. An order implementing the promotion program was issued in late March. The deductions for this promotion program started on May 1. Additional promotions under this program started in September. The program must be approved by the dairy farmers to be continued after September 30, 1985.

The law contains a mandatory 50-cent-per-cwt deduction on all milk marketed from December 1, 1983, to March 31, 1985, to encourage the adjustment of production to levels that are consistent with demand. The funds collected will be used to help fund the paid diversion program.

The paid diversion program started January 1, 1984. The payment rate is $10 per cwt for reductions in marketings of 5 to 30 percent from calendar 1982 marketings, or the average of calendar 1981 and 1982 marketings. Producers who elected to contract signed up by January 31, 1984, for the 15 month program that ends on March 31, 1985.

Nearly 38,000 dairy farmers signed contracts with USDA to reduce their milk marketings. They signed up for a total milk diversion of 7.5 billion pounds during calendar 1984, 5.5 percent of 1983 marketings and 22.9 percent of their base. In 1983, the participants milked about 19 percent of all U.S. dairy cows and marketed about 22 percent of the milk sold. They represent 12 percent of all operations with milk cows and about 20 percent of all commercial dairy farms. Because some participants were eligible for program payments for cuts in marketings made by the end of 1983, actual diversions in 1984 are estimated at about 5.3 billion pounds, 3.9 percent of 1983 marketings.

Production Expansion Ended

Milk production during calendar 1983 was nearly 140 billion pounds, up 4.2 billion (3.1 percent) from the 1982 record. The gain stemmed from more cows and larger yields per cow that a year earlier. Each quarter of 1983 posted a year-over-year expansion in production, with April-June leading the way with a gain of 3.2 percent. Production for each of the first three quarters of 1984 has been below a year earlier with July-September down 3.9 percent. It was nearly 1 percent below third-quarter 1982.

Milk production for the first 2 months of 1984 was up from a year earlier. January was up 0.1 percent and February was up 1.8 percent. February marked the 58th consecutive month of year-over-year increases. However, if adjusted for the extra day, production in February was down 1.8 percent. Production during October was 4.3 percent below 1983 and 1.1 percent lower than 1982. October was the tenth month of the 15-month milk diversion program and the ninth consecutive month of year-over-year production declines. The October drop resulted from 2.9 percent fewer cows and a 1.2 percent decrease in output per cow. During January-October, milk production was 3.1 billion pounds (2.6 percent) below last year.

Milk output per cow increased by 2.3 percent in 1983, slightly more than two times the annual rate of gain for 1982, but approximately equal to the most recent 10-year average of 2.4 percent. In general, the year-over-year gains in yields slowed throughout 1983. First-quarter yields were up 2.5 percent, while the fourth quarter posted a 2 percent increase. The moderation of the gains likely resulted from lower effective receipts for milk marketed after April 15, 1983 (the first 50-cent deduction started April 16), higher feed costs in second-half 1983, and the refundable second 50-cent deduction during September-November 1983.

The slowing has continued in 1984. In fact, output per cow is likely to be down about 0.6 percent from 1983 because of concentrate feeding reductions and other management changes. The 1.4 percent drop in output per cow during October is expected to moderate during November-December. With an improved milk/feed price ratio this fall, dairy farmers may increase the rate of grain feeding. In 1985, yield per cow is anticipated to move above year-earlier levels as the effect of the diversion program ends. For the year, output per cow is projected to be up 1 to 2 percent.

The average number of milk cows on farms during 1983 was up 0.8 percent from 1982. When combined with gains of 0.6 percent in 1980 and 1 percent in 1981 and 1982, last year was the fourth year of an expansion in cow numbers, the longest expansion in the Nation's dairy herd since 1941-44. The average number of milk cows on farms was 0.4 percent larger than a year earlier in January 1983, but nearly 1 percent larger in November. The herd increased in size and at a faster pace in 1983 than a year earlier because of a large number of replacement heifers, the relatively low cull cow price, and the unknown direction of the dairy price support program.

The dairy cow herd during October 1984 was 332,000 head below the November 1983 peak, a drop of about 3 percent. Some additional declines may occur this fall, resulting in an annual average that is about 2.4 percent below 1983. Much of the drop during first-half 1984 was because of increased culling by diversion program participants. However, some nonparticipants also reduced their herds because of lower effective returns per cwt of milk marketed and higher production costs. The dairy herd is forecast to start 1985 about 3 percent below 1984. The number of cows on farms may increase as the diversion program ends, but the gains could be limited because of lower milk (support) prices. For 1985, the average number of cows is projected to be 1 to 2 percent below this year.

With all of the attention on the diversion program, the nonparticipating producers have been somewhat ignored. In 1983, this group expanded milk output by 5.5 to 6 percent. By mid-1984, these producers had reduced production to be about even with a year earlier. If the earlier expansion of the nonparticipants had not been sharply reduced, their growth would have offset the declines of the participants. Clearly, lower milk prices and higher feed costs do weaken milk production.

This year for the first time, federally inspected (FI) cow slaughter is being reported separately for dairy and beef cows. The FI dairy cow kill for January-June was 1.74 million head, implying a total commercial slaughter of 1.81 million (not all cows killed are federally inspected). Assuming death loss at 1 percent (2 percent annually), the number of replacements that entered the herd during January-June 1984 was 1.65 million head, 33.8 percent of the July 1, 1983, inventory. Total FI cow slaughter from January through November 17th (46 weeks) totaled 7.2 million -- 2.9 for dairy and 4.3 for beef.

Dairy heifers (500 pounds and over) held for herd replacement totaled 4.95 million head, up 70,000 (1.4 percent) from July 1, 1983. With a gain in replacements and a decline in milk cows, the number of heifers per 100 cows was a record 45.6. Five years ago, when the current surplus started, there were 38.5 replacements per 100 cows.

A record rate of culling during first-half 1984 offset the large number of replacements calving and entering the herd, hence the 290,000-head decline from January to June. Based on the January 1 and July 1 inventories and assuming that 35 percent of the July 1, 1983, replacements calved during first-half 1984, 2 million head or about 18 percent of the January 1, 1984, cow herd were culled (including death loss). The 35 percent is based on average ages of 27 months for calving and 10 months for a replacement to reach 500 pounds. During first-half 1983, culling and death loss totaled about 1.63 million head, nearly 15 percent of the January 1, 1983 inventory. Therefore, about 370,000 additional dairy cows likely went to slaughter during first-half 1984 when compared with first-half 1983. For the last 10 years, the culling rate during January-June has averaged 13.5 percent.

For the rest of 1984, with cow numbers expected to decline slightly, while the drop from a year earlier in output per cow slows, milk production is likely to decrease at an annualized rate of about 4 percent. Total production for 1984 will be about 136 billion pounds, down 3.9 billion pounds (2.8 percent). In 1985, production is expected to be unchanged to 2 percent higher than this year.

Farm Milk Prices Improve

Milk prices received by farmers in August were below a year earlier. However, the difference was only about one-third of that in April. During November, milk prices were slightly above last year. Prices are expected to remain above year-earlier levels until March.

Reported U.S. manufacturing grade milk prices received by farmers during September-November averaged $12.90 per cwt, 10 cents above the same period in 1983. In contrast, the average during June-August was down 23 cents and during January-May it fell short by 40 cents. This fall and winter Grade B prices are expected to average about the same to 30 cents higher than one year earlier. For all of this year, the average is anticipated to be about $12.45 per cwt, down nearly 20 cents from 1983. In calendar 1985, with lower support prices on April 1 and July 1, the average will likely be down 50 to 80 cents per cwt.

Prices received by farmers for all milk during January-November averaged $13.35 per cwt, 20 cents below a year earlier. Milk prices have strengthened, September-November prices were about 17 cents above a year earlier, but the annual average probably will be about 20 cents below 1983's $13.57 per cwt. The effective all-milk price (adjusted for differences in deductions) may be down about 30 cents. This winter, the reported all-milk prices are expected to remain above year earlier levels, but will likely move below during the spring and remain below for the rest of the year, given the lower support prices. The all-milk price in 1985 may average 35 to 70 cents lower than 1984. The effective price may be unchanged to 35 cents lower, because the 50-cent-per-cwt deductions stop at the end of March.

Feed Prices Below Last Year

The 1984/85 corn crop, based on November 1 conditions, is forecast at 7.5 billion bushels -- a yield of 105.9 bushels per acre on 71.1 million acres harvested for grain. The crop has put downward pressure on prices this fall. The crop will likely be larger than usage, thus carryover stocks are expected to increase. As a result, farm prices of corn will be lower in 1984/85 that last year when the market was dominated by drought and the effects of PIK. Prices at the farm are expected to range from $2.65 to $2.95 per bushel, compared with last year's average of about $3.20.

This year's soybean crop is also expected to exceed use, so stocks will increase. With additional stocks, soybean prices during 1984/85 are likely to be less volatile and lower--ranging from $6.00 to $7.20 per bushel, compared with $7.75 in 1983/84. Prices for soybean meal (Decatur) are forecast to average $145 to $165 per ton, down from last year's season average of $188.20.

The average price paid by farmers for 16-percent protein dairy feed has declined since last year. Mid-November prices averaged $177 per ton, down $28 from a year earlier. With milk prices during November higher by 20 cents, the dairy farmer was able to buy 159 pounds of grain for each cwt sold--up 23 pounds (16.9 percent) from a year earlier and the highest value for the milk/feed ratio since January 1983.

With corn and soybean meal prices lower and expected to remain below through mid-1985, the cost of 16-percent protein dairy ration will likely remain lower than a year earlier at least until next summer. Meanwhile, milk prices, which are higher now, are expected to fall below year-earlier levels by spring. As a result the milk/feed ratio will be higher than a year earlier during first-half 1985 and lower during the second-half.

Wholesale Prices Advance

During June, butter prices (Grade A, Chicago) advanced 18 cents to 160.75 cents per pound, 15.25 cents above a year earlier, 17.5 cents above the CCC purchase price, and 3 cents above the minimum sellback price. This large early price advance was triggered by a certain amount of panic in the cream markets and could not be supported by basic supply-demand conditions. During July, butter prices fell 15.25 cents to 145.50 per pound, even with a year earlier. In August, prices again advanced, rising 12.35 cents to the minimum sellback level of 157.75 per pound, 9.75 cents above a year earlier. Butter prices are expected to move lower by year end, to a level near the current purchase price of 143.25 cents per pound. In 1985, they will likely move lower in March-April and June-July as the level of the support purchase price is reduced.

The price of Cheddar cheese (Wisconsin assembly points, 40-pound blocks) also demonstrated strength this summer. The September average of 144.29 cents per pound was 8.25 cents above June, and about 5 cents above the support purchase price. Prices in late October and early November have moved about 4.5 cents lower. Some additional downward movement seems likely before the end of the year. Like butter, cheese prices will move lower near April 1 and July 1.

Retail Dairy Prices Up Slightly

The Bureau of Labor Statistics retail price index for all dairy products stood at 256.1 (1967=100) in October, up 2.4 percent from a year earlier. In contrast, the all-food index was up 3.9 percent, while all retail prices were 4.2 percent higher. Retail dairy prices in November-December are expected to be up about 2.5 percent from 1983, leaving the average at about 253.3 for 1984, a gain of 1.4 percent from 1983. Retail prices for all foods are expected to average about 4 percent higher. In 1985, retail prices of dairy products are projected to be unchanged to 2 percent higher, food items will range from 2 to 5 percent larger and all retail items 3 to 7 percent more.

Commercial Use Higher

Third-quarter commercial disappearance of all milk and dairy products, on a milk-equivalent, fat-solids basis, was up a healthy 1.8 percent, following a strong first-half gain of 4.2 percent. For January-September, commercial disappearance is up 3.1 billion pounds, 3.4 percent. In the absence of any additional displacement by donated dairy products, commercial sales responded strongly to the robust improvement in the economy. Even if sales remain unchanged this fall, commercial use for 1984 would be up 2.5 percent. However, some additional gains seem quite likely because of larger per capita incomes and the national dairyproduct promotion program. For all of 1984, sales are expected to be up about 3 percent. In 1985, commercial disappearance of all dairy products is projected to be up 1 to 4 percent.

A comparison of January-September commercial sales of major dairy products with a year earlier shows that butter was up 7 percent, American-type cheese 12 percent, cheese other than American types 7 percent, frozen dairy products 0.4 percent, fluid products 1 percent, and nonfat dry milk 19 percent. Meanwhile, canned milk was down 11 percent.

CCC Stocks Lower

Milk-equivalent stocks (fat-solids basis) held by CCC on October 1 were 15.6 billion pounds, a decrease of 3.5 billion (18.5 percent) from a year earlier. Meanwhile, stocks held by the trade on October 1, at 5.2 billion pounds, were unchanged from last year. Government owned stocks have declined since June because CCC program usage was larger than net removals from the market.

CCC Purchases Sharply Lower

USDA net removals (delivery basis) of dairy products under the price support program during January-October equaled 8 billion pounds of milk (fat-solids basis), down 7.2 billion (48 percent) from the same period in 1983. Government purchases are being reduced because commercial disappearance and farm use are larger, while milk production is lower. For calendar 1984, CCC net purchases are expected to total about 8.5 billion pounds, compared with 16.8 billion in 1983. In 1985, CCC net purchases are projected to remain about unchanged.

Dairy Support Costs Lower

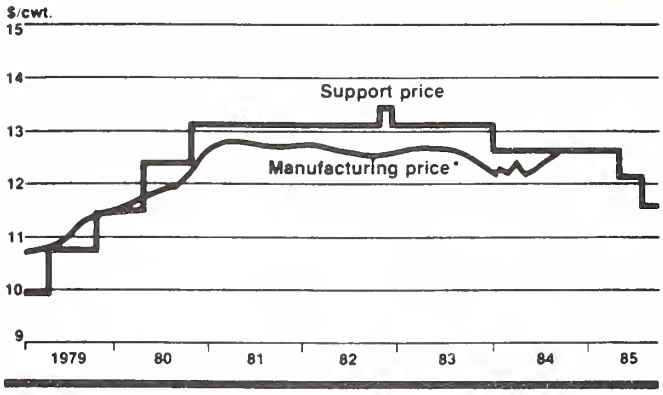
There are a number of ways to compute the cost of the dairy price support program. One method is to look at the taxpayer's cost. With this method, you sum the cost of net purchases for a marketing year, reduce the total for any deductions, and then add on diversion payments. Under this method the costs in 1982/83 were about $2.5 billion, up 16 percent from a year earlier. In 1983/84 costs dropped sharply to about $1.4 billion and are projected to be about $1.5 billion in 1984/85.

While a drop of about one-half in the level of removals is impressive, it does not give the final verdict on the paid diversion program. That depends on what actions dairy farmers take in the coming year.

The diversion payments were intended to offer short-term relief, allowing farmers time to adjust their production resources to create a closer, longer-term balance between milk supply and demand. The diversion program ends on March 31, 1985, and is not expected to be extended. If producers increase milk marketings significantly after the program ends, we could end up back in circumstances similar to that of 1983 by 1986.

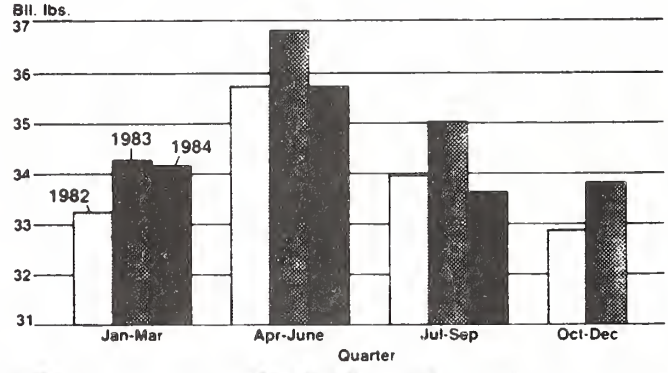
To recap, milk production in 1985 is expected to be up about 1 percent, but farm use will be down, thus, marketings and total supply will grow by about 2 percent. Commercial disappearance is also expected to be up about 2 percent, leaving USDA net removals nearly unchanged at about 8 billion pounds. The relatively large level of purchases will keep wholesale prices near the lower CCC purchase prices. With lower product prices, pay prices to farmers are likely to be lower, while retail prices remain about unchanged.

Milk Prices

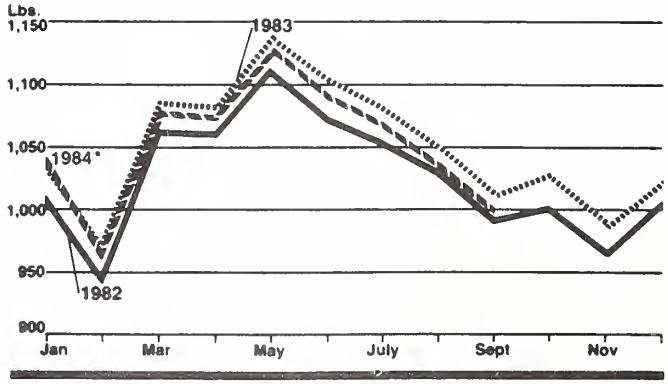


*Adjusted to a fat test of 3.67 percent

U.S. Milk Production by Quarters

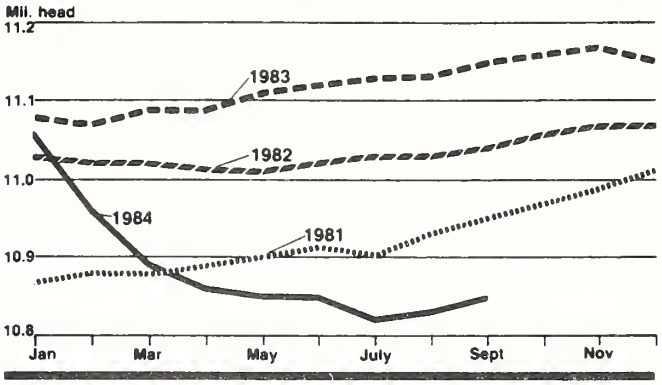


Milk Production Per Cow

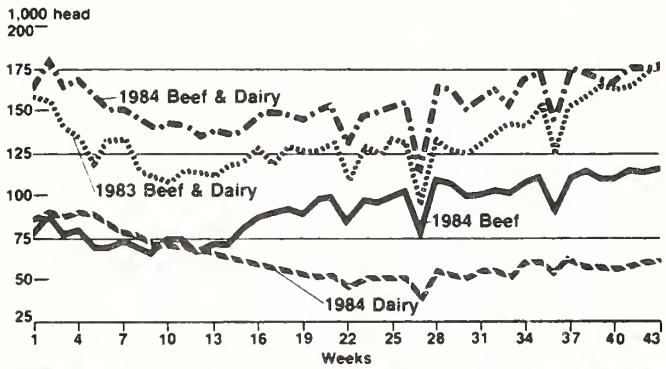


*Adjusted for leap year.

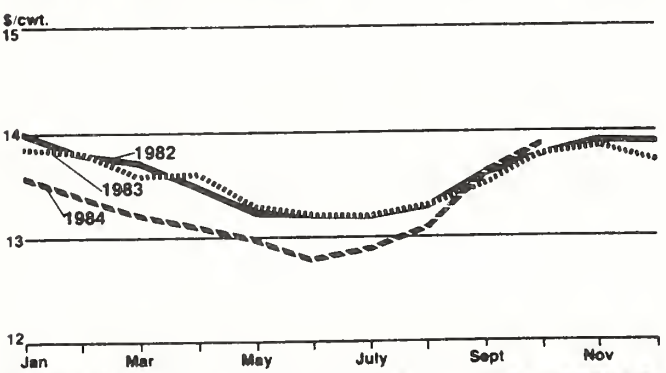
Milk Cows on Farms



Cow Slaughter, Federally Inspected

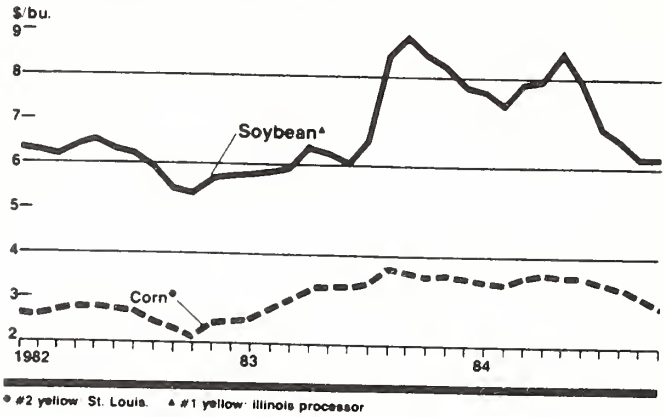


All Milk Prices*



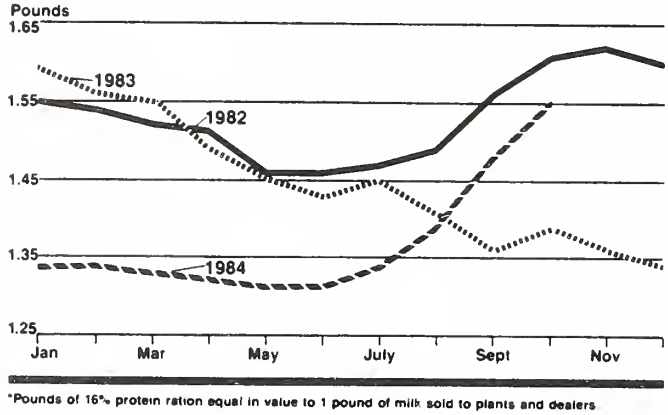
*U.S. average price received by farmers for deliveries to plants and dealers.

Corn and Soybean Prices



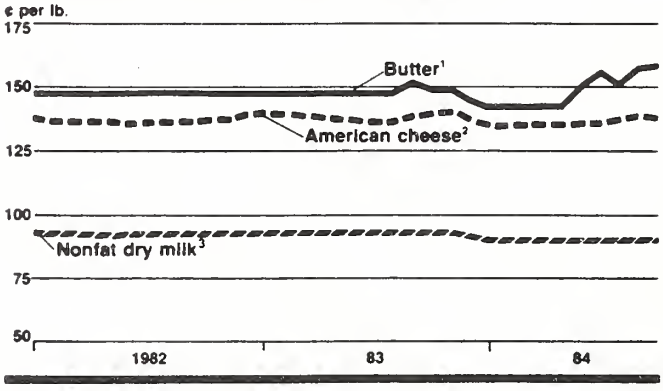
● #2 yellow St. Louis. ▲ #1 yellow Illinois processor

Milk/16-Percent Feed Price Relationship*



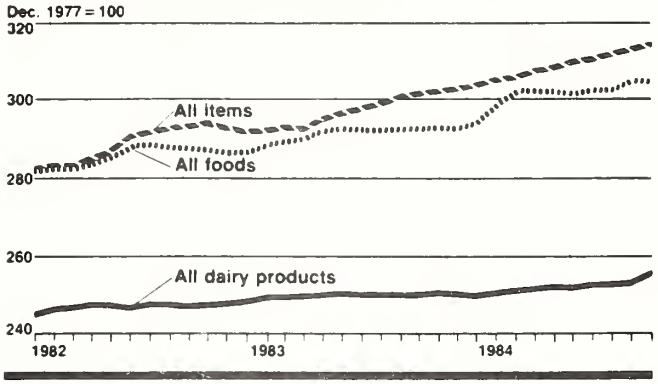
*Pounds of 16% protein ration equal in value to 1 pound of milk sold to plants and dealers.

Wholesale Dairy Product Prices



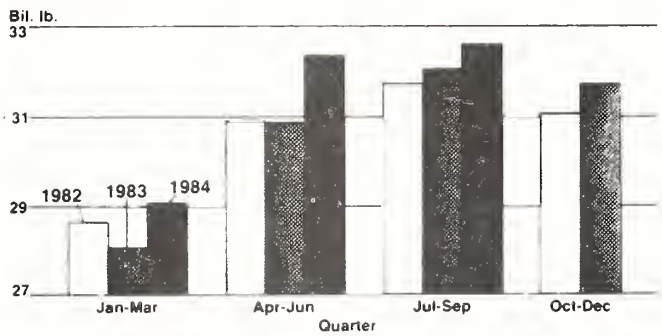
[1]Grade AA, Chicago. [2]High-heat, Central States.
[3]40-lb. block, Wisconsin assembly points.

Retail Price Indexes*



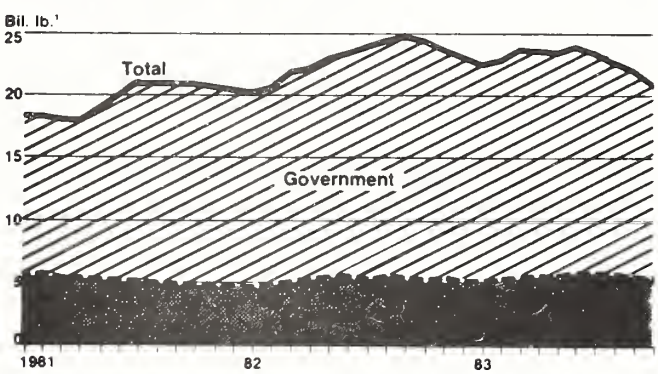
*Consumer price index for all urban consumers

Commercial Disappearance of All Milk Products*



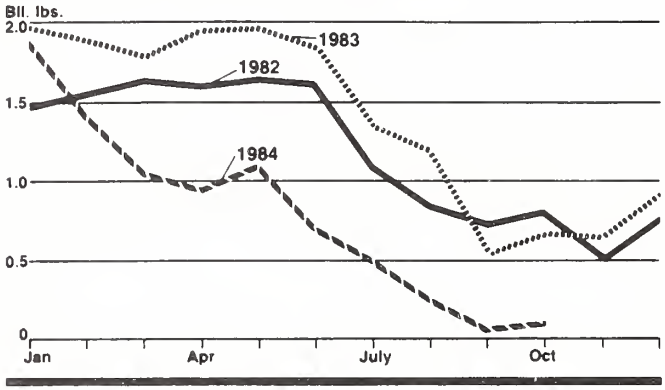
*Milk-equivalent fat-solids basis

Dairy Product Stocks*



*As of first of month ¹Milk-equivalent, fat-solids basis

USDA Dairy Product Purchases*



*Net removals, milk-equivalent, fat-solids basis

Summary

	1983 Bil.lbs.	Percent change	1984 Bil. lbs.	Percent change	1985 Bil. lbs.	Percent change
Production	140.0	+3.1	136.1	−2.8	137.2	+0.9
Marketings	137.0	+2.8	131.2	−4.2	134.0	+2.2
Total supply	144.2	+2.1	139.2	−3.5	141.9	+2.0
Use	122.2	−0.2	125.9	+3.0	128.3	+1.9
Stocks, ending	5.2	+13.7	5.4	+3.2	5.4	—
Total use	127.4	+0.3	131.3	+3.0	133.7	+1.8
USDA net removals	16.8	+17.7	7.9	−52.8	8.2	+3.9

DAIRY DISCUSSANT

Ivan Strickler
President, Mid-America Dairymen, Inc.

Annual Agricultural Outlook Conference
Session #26, Washington, D.C.

For Release: Wednesday, December 5, 1984



It is a pleasure for me to appear on the Outlook '85 program. As a dairy farmer, the dairy outlook session is of extreme interest to me.

In listening to the remarks of Clifford Carman, it is apparent that the United States is not the only country that has had a supply/demand problem with milk production. Most of the countries that produce milk have been increasing their milk production for the past several years and some are seeking ways to reduce milk production.

One example of an effort to reduce milk production is the EC countries where dairy farmers, for the first time in 25 years, will be cutting back on milk production instead of forever expanding. The reduction target for 1984 was 7.8% but recent projections indicate a 2% reduction is more realistic.

World milk production is forcast to drop in 1984 and 1985. Milk production in 37 major producing countries is expected to decline about 0.2% in 1984, following increases of 2 and 4% in 1982 and 1983. While this improvement in world milk production is good news, it does not necessarily reduce the pressure on U.S. markets.

We, in the United States, thought our milk production last year of 140 billion pounds was a lot of milk. As measured by our domestic consumption it was, but in relation to the world it was not. The 140 billion pounds represented only about 15% of total world milk production. Because we are only 15% of the total world milk production, we are very sensitive

on the producer side of the industry about what happens to milk production in the rest of the world. This concern intensifies as dairy farmers in the United States bite the bullet and make the necessary sacrifices in their own operations and their own financial wellbeing to reduce milk production and bring it more closely in line with domestic consumption of milk and milk products.

Milk production in the United States in 1984 will be down about 3% from 1983. As I mentioned, milk production in the EC countries is projected to be down about 2% and world production down 0.2%. However, milk production in New Zealand, one of the worlds major exporters of dairy products is projected to be up almost 7% from 1983. As dairy farmers in the United States bring our milk production more closely in line with domestic consumption, we anticipate additional pressures on our markets from foreign sources such as New Zealand, who is increasing production, and Australia, who is maintaining milk production at previous levels.

We are concerned that products produced by U.S. dairy farmers will be placed at a competitive disadvantage, both in this country and in the world markets, by other governments who continue to subsidize their own dairy products in an attempt to capture existing markets served by U.S. dairy farmers, in both the United States and world dairy markets.

The United States must continue to maintain the present quotas and establish additional quotas on foreign dairy products and find ways to place U.S. dairy farmers on a competitive equity with dairy farmers in other countries with whom we compete on a continuing basis. This is essential for this country to continue to have a viable domestic dairy industry.

As I mentioned, U.S. milk production is down this year from 1983. This improvement is primarily due to the success of the paid diversion

program. About 20% of the commercial U.S. dairy farmers are participating in the diversion plan and the plan is working. Production is decreasing. Product purchases by the CCC are considerably below year ago levels. For the first 10 months of 1984, CCC purchases are almost 50% below the same period a year ago. As a result of the reduced purchases, government costs of the price support program are down.

The cost of the paid diversion plan is being more than offset by the 50¢ per hundredweight assessment on all milk marketed in the United States. Payments to dairy farmers praticipating in the milk diversion program during the first six months of 1984 totaled about $330 million. During the same time period, the 50¢ assessment generated about $500 million; thus, dairy farmers have contributed, during the first six months of the program's operation, $170 million more than has been paid out to dairy farmers participating in the program. This point is usually overlooked or eliminated in reports when a release is made in regard to the paid diversion program, but the public needs to know and understand that the diversion program is not a handout from the government.

The Dairy Adjustment Act, which is a part of the Dairy and Tobacco Act of 1983, was a pièce of legislation that became law as the result of a considerable amount of work by dairy farmers and their cooperatives. The legislation is better known as the Dairy Compromise Bill because it was just that, a compromise of the various positions and ideas of many dairy farmers throughout the United States. The consensus was hard to reach, difficult at times, seemingly impossible at others, but nonetheless the consensus was reached and the industry came together, supported and passed one single program which was enacted and which is working.

We seem to have the same environment for the 1985 farm bill. Because conditions are different in different parts of the country, dairy farmers are again having a difficult time coming together and agreeing on a single course of action. But eventually they will agree, as they did in

1983, and will come together on a compromise position and they will support it and that program will be enacted as a part of the 1985 Farm Bill.

I believe that the Dairy Section of the 1985 Farm Bill should and will include provisions that provide for:

(1) The establishment of dairy farmer prices by a parity index.

(2) The development of a dairy specific parity.

(3) The continuation of the CCC product buying program, as authorized by the 1949 Act.

(4) Standby authority for an incentive-penalty program which would be triggered and made effective when significant reductions in the price support level were called for, based on CCC purchases. For example, if the formula calculations resulted in a price reduction of $1.00 per hundredweight, the actual support price reduction would be limited to 50¢ per hundredweight and the incentive-penalty program would be implemented to adjust supply to projected demand.

I believe that provisions such as I have listed will be a definite improvement in the operation of the dairy price support program and will help maintain a desirable relationship between supply and demand.

Care must be exercised in making decisions pertaining to the price support level in 1985 under current law and also under proposed legislation in the 1985 Farm Bill. It would not be wise to over-adjust milk production downward below desirable levels. Adjustments are taking place in milk production at the farm level -- adjustments that appear to go beyond those that would be expected by the milk diversion program.

Data recently released by the market administrator in St. Louis supports this position. The data indicates that Missouri Grade 'A' producers who are not participating in the diversion program, but who produced milk in the base period and each month of 1983, are not increasing milk production but instead are deceasing milk production compared to a year ago.

In January, the Missouri nonparticipants' milk production was 0.4% above 1983. In February, milk production, unadjusted for the extra day was up 3.7%, but down 1.9% in March. April milk production was up

0.4%, but the downward trend returned in May. May milk production of the nonparticipants' was down 2.2%, June down 8.8%, July down 7.5%, August down 4.9% and September milk production was down 8.0%.

A study being conducted by the University of Arkansas which includes all producers in selected areas of the Southwest reveals a similar pattern for Southwest Missouri and Northwest Arkansas.

Obviously, factors other than the diversion program are resulting in program nonparticipants reducing their milk production. While it is not know how widespread, this situation is, it is a factor that must be considered when the Secretary makes decisions affecting 1985 price support levels, and 1985 legislative proposals.

While milk production is decreasing, the consumption of milk and milk products is increasing, a very desirable relationship. A major feature of the Dairy and Tobacco Adjustment Act of 1983 was a mandatory 15¢ per hundredweight deduction from all milk marketed to be utilized for the advertising and promotion of milk and milk products. The deductions began with May deliveries and programs are being implemented on a national and regional basis that will have a continuing favorable impact on the consumption of milk and milk products. As President of the National Dairy Board, I am very close to the work that is being done to improve the consumption of milk and milk products in this country and I am very confident that further increases in consumption of dairy products will be forthcoming in 1985 and the years to come as a result of the funds generated by the 15¢ per hundredweight deduction authorized by the present law. Dairy farmers are aware of the benefits of advertising their product and will continue to support the advertising and promotion of milk in the future.

About 36% of the membership of Mid-America Dairymen, Inc. is participating in the milk diversion program. As a result of this high level of participation, which is among the highest, if not the highest rate of participation of any cooperative in the country, our milk production is

down substantially from year ago levels. Through October, Mid-Am milk production, on a daily basis, was about 12% below the same period of 1983. If all dairy farmers in the U.S. had responded as Mid-Am members have, the overproduction problem would be behind us. Our members have been willing to make personal sacrifices in order to improve the national situation.

In an attempt to determine what Mid-Am members' milk production plans are for 1985, we sent each of our 11,000 members a questionnaire asking them to indicate their production plans for 1985. We received responses from slightly over 35% of the membership, and of those responding, 44% were participating in the milk diversion program and their average contract was for a 22% reduction. Those producers responding indicated they intended to increase milk production about 7% in 1985 over 1984 levels. Since a higher portion of the questionnaire respondents are participating in the program than the Mid-Am average, 44% versus 36%, we anticipate the increase in total Mid-Am milk production will be somewhat less than 7%, perhaps 5% above 1984 levels. We will still be about 6% below 1983 levels. However, we do not anticipate total U.S. production to be up 5% since Mid-Am members participated in the diversion program at a higher rate than all farmers in the U.S. An increase in U.S. milk production of 1-2% appears likely which is about the same as our projected consumption increase of 2%.

In conclusion, I would like to reiterate the point that dairy farmers have risen to the occasion, accepted the challenges placed upon them and worked together to develop programs that were necessary to resolve the crisis they found themselves in. I believe dairy farmers will meet the challenge set before them for 1985 and will work together to develop a strong, viable and workable 1985 farm bill.

Thank you for this opportunity to share my thoughts with you.

MAJOR IMPACTS ON AGRICULTURAL TRADE: A VIEW FROM THE SOUTH

Mr Jeffrey Rae
Deputy Director, Bureau of Agricultural Economics, Canberra

Annual Agricultural Outlook Conference
Session #27, Washington, DC

For Release: Wednesday, December 5, 1984

INTRODUCTION

The global economic recession in full force at the beginning of the 1980s precipitated a severe decline in world commodity prices. However, the strong rebound in the United States has not, so far, translated into strong, comprehensive growth in the rest of the world. This and the renewed weakening of commodity prices are unexpected and a cause for concern - concern which is heightened by emerging signs that the US recovery may be petering out.

As hopes for an improvement in world commodity prices have dissipated, the prospects for an easing of the recent intense export competition have receded. These developments enjoin us to refocus on the forces which determine world agricultural trade, particularly agricultural protection.

This paper will canvass these issues from the perspective of a relatively small, but important, agricultural producing nation on the Pacific Rim. Initially, I will review the outlook for the agricultural commodities which are important to Australia. Subsequently, I will address the role of the macroeconomic factors in world commodity markets. Finally, I will scrutinise the implications of agricultural support policies, particularly of the developed countries of the north, and suggest where adjustments might be made for the mutual benefit of the countries in question as well as agricultural exporters such as Australia and New Zealand.

THE OUTLOOK FOR MAJOR AGRICULTURAL COMMODITIES

The world economy continues to grow although there are significant disparities in the recovery. The United States, Japan and most Asian developing countries have been growing strongly. In contrast, Western Europe has tended to lag and a number of developing countries, notably those in Latin America and the Philippines, have experienced indifferent growth, largely because of high foreign debt. Despite the upswing, the recovery in real commodity prices has generally been much weaker than in previous trade cycles and some prices remain depressed. Moreover, the rebound in prices seemed to lose momentum in mid-1984 (see The Treasury 1984).

Against this background, the following is the BAE's outlook for those agricultural commodities which are important to Australia.

Beef and Veal

Australian cattle numbers have declined from 33.4 million in 1976 to 21.8 million in 1984. The BAE expects this trend to be reversed in 1985 as herd rebuilding gets under way and estimates total slaughterings and production at 6.9 million head and 1283 kt, respectively. Exports should rise to 425 kt from the 1984 level of 390 kt due to higher demand in the United States and augmented availability of Australian beef.

Exports to the United States are anticipated to be 250 kt and the US price for Australian boneless cow beef should rise by 11 per cent in 1985 to US245c/kg, principally due to reduced output, lower pork supplies and buoyant consumer demand in the United States. As total US imports are not expected to increase in 1985, the negotiation of voluntary restraint levels should not be required in 1985. We forecast Australian exports to Japan to increase by 3 per cent to 95 kt, mainly because of the increase in our beef import quota. Exports to Republic of Korea and South-East Asian countries are anticipated to decline.

Wheat

The international outlook for wheat is dominated by weak demand and large and growing stocks, and prices are likely to ease to US$145/t in 1985. With the record 509 Mt crop expected for 1984-85, world wheat prices are at a five-year low. World production in 1985-86 is expected to be in excess of 500 Mt. Output reductions in the USSR, Canada and Argentina in 1984-85 should be offset by improved prospects in China, the EEC, the United States and Australia. Given projected utilisation of 500 Mt, world closing stocks in 1985 are forecast to increase, for the fourth year in succession, to 129 Mt.

The BAE estimates that the 1984-85 Australian wheat crop will be 17.4 Mt, the third largest on record. This crop, together with stocks of 7.4 Mt, should make for abundant supplies for export in 1985.

Feed Grains

We forecast world production of feed grains to increase by around 30 Mt to 820 Mt in 1985, largely reflecting an expectation that production in the USSR will revert to a more normal level. World utilisation of feed grains in 1984-85 is expected to rise by 22 Mt to 780 Mt, stimulated by improving world economic conditions and lower prices; this should cause closing stocks in 1984-85 to rebound to a relatively modest 100 Mt. Following our forecast decline in world feed grain prices in 1984-85, there is some prospect of prices improving, provided the 1985 US farm program is able to contain production.

Because of record plantings, Australian barley production is estimated at 4.9 Mt, only slightly below the record harvest of 1983-84. Production of oats is estimated at 1.4 Mt, some 0.9 Mt lower than the record of the previous year.

Wool

Demand for wool is expected to strengthen somewhat in 1985 as the international economic recovery continues. Australian wool production is anticipated to increase by nearly 4 per cent to 755 kt greasy in 1984-85, mainly as the result of sustained favourable pastoral conditions which are

also expected to increase the proportion of medium wools and reduce that of fine wools in the Australian clip. Increases in Australian and New Zealand wool production are anticipated to account for most of the forecast rise of about 2 per cent in world wool production in 1984-85.

While stocks held by the South African and New Zealand Wool Boards have declined over the past two years and are now at low levels, the Australian Wool Corporation has increased its stock holding. We estimate the Corporation will have around 1.3 million bales at the end of 1984-85; stock buildup has occurred mainly in the medium and coarse wools. Average prices for Australian wools in 1984-85 are expected to increase by around 4 per cent to about A505c/kg clean on a market indicator basis.

Sugar

World spot prices for sugar remain depressed, with little scope for a sustained improvement to more remunerative levels given the prospects of only a minimal reduction in world stocks of 38 Mt. Assuming normal seasonal conditions in Central America in early 1985, prices are likely to remain between US 5c/lb and US 7c/lb.

World production should decrease by around 2 per cent to approximately 96 Mt in 1984-85. Economic growth and low prices are expected to increase consumption to an estimated 98 Mt in 1984-85. Australian cane production should increase to a record 3.6 Mt in 1984-85, but gross returns are anticipated to decline by 1 per cent. Although South African cane production should be higher, Brazil and the Philippines are forecast to reduce output in 1984-85. A recovery in EEC output of beet sugar to 12.7 Mt should be largely offset by a reduction in beet production in the USSR.

Dairy Products

World stocks of the major dairy products have continued to rise, while prices have fallen markedly. We expect prices in 1985 to remain weak, reflecting low prospects of either growth in demand or significant change in world stocks, despite production control measures in the United States and the EEC. Prices should be at or close to the minima set by the International Dairy Arrangement (IDA) under the GATT. However, recent initiatives by the EEC could lead to the breakdown of the IDA and hence a further fall in prices.

Australian milk production in 1984-85 is forecast to be 5900 ML, down slightly from the previous year's level of 5923 ML. A 10 per cent rise in manufacturing milk output to 4353 ML is expected to result in a large exportable surplus of the major dairy products; manufacturing milk returns are forecast to fall by around 11 per cent principally because of poor export returns.

Overall Outlook

Since the early 1970s, there has been strong growth in agricultural trade, principally due to increased demand by the developing and centrally planned economies. Our assessment is that this experience is unlikely to be repeated in the 1980s, although the prospects in East and South-East Asian markets appear to be bright, even if they are not large in absolute terms (see Andrews, Roberts and Adams 1984). The immediate outlook is not as favourable as expected, given that we are well into the recovery phase of the international business cycle. Part of the explanation appears to

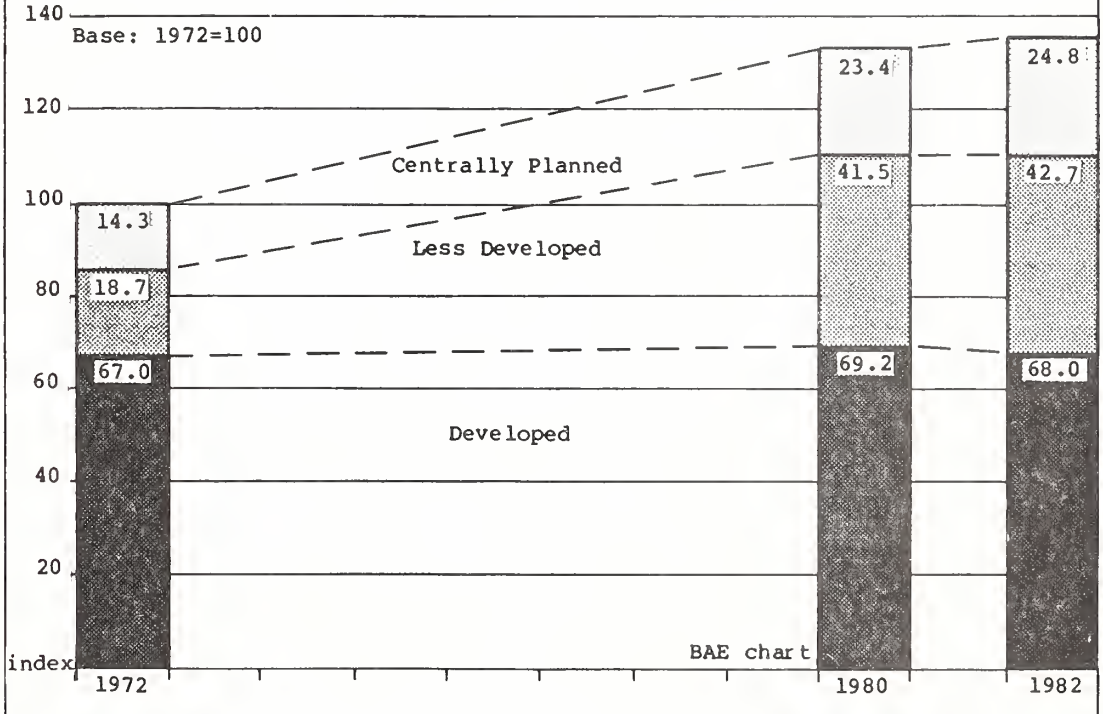
lie with the macroeconomic forces which shape world commodity markets and the relationships between them. Another determinant has been the increasing restrictions on market access and government subsidised competition which Australian agricultural exports have to overcome.

INTERNATIONAL MACROECONOMIC DEVELOPMENTS AND CONDITIONS

It has long been recognised that world commodity prices are affected by variations in macroeconomic conditions in the importing countries, as well as by supply stocks in the exporting and importing countries. However, the 1950s and 1960s saw two decades of relatively high and stable economic growth and of relatively rigid exchange rates under the Bretton Woods arrangements. This experience caused us to concentrate on acts of God (droughts, floods, famine) and of man (strikes, civil disturbances, war) acting on the supply side as the major cause of commodity price fluctuations. (This perception led, incidently, to the development of domestic and international arrangements to dampen fluctuations in supply.)

World agricultural trade grew strongly in the 1970s; import volumes (excluding intra-EEC trade) grew by approximately 34 per cent in the period 1972-80, while average prices rose by 13 per cent in US dollar terms (Andrews, Roberts and Adams 1984). In the early 1970s, imports by the developed countries of the Northern Hemisphere (the EEC, North America and Japan) dominated world agricultural trade. After 1972, import growth occurred and was concentrated in the developing and centrally planned economies where import volumes increased by 122 per cent and 64 per cent in the period to 1980. Since then there has only been minor growth in agricultural trade. These developments are well illustrated by Figure 1.

Figure 1: WORLD AGRICULTURAL IMPORTS (a)



(a) Excluding trade between the members of the European Community

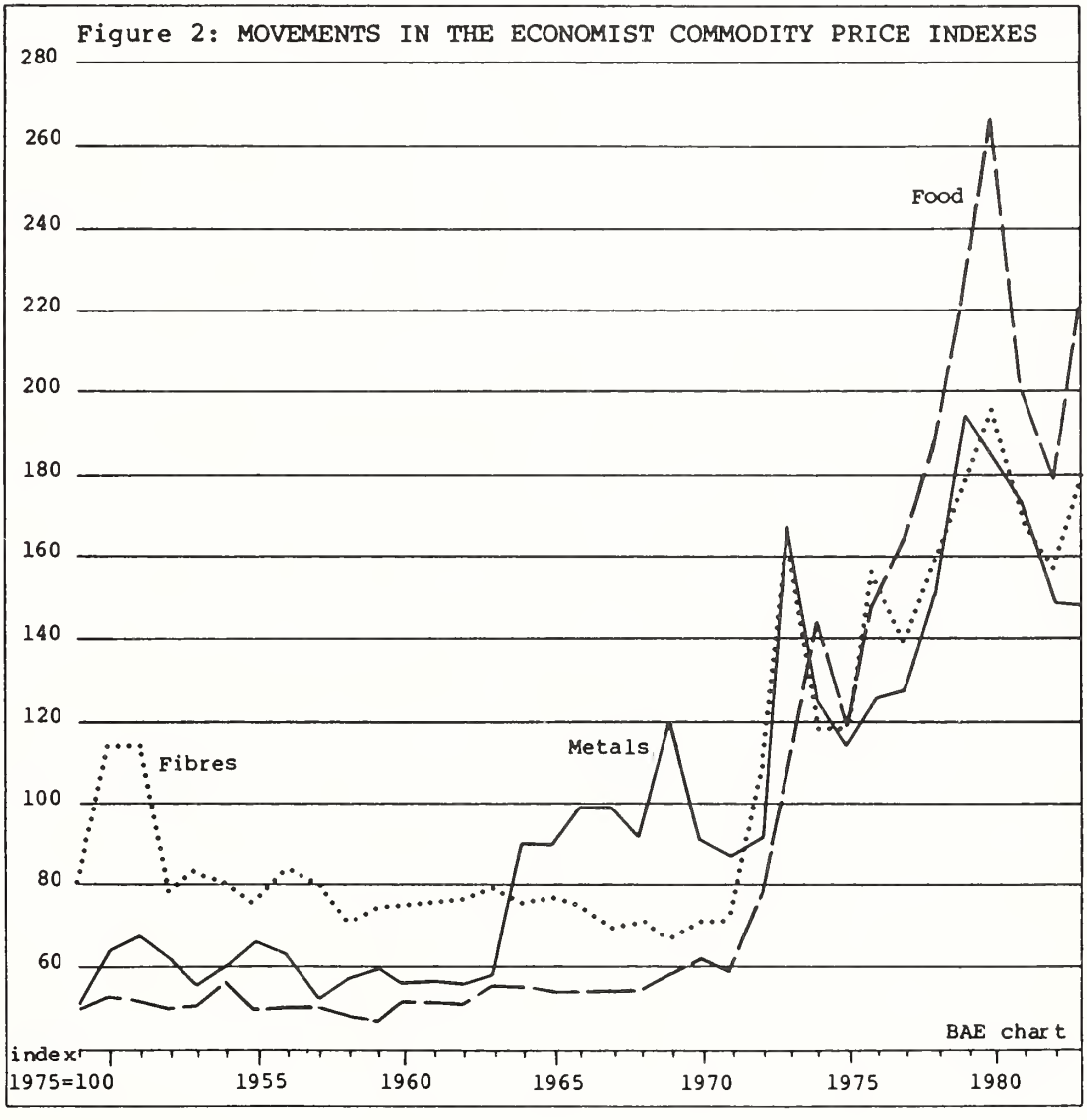
Data sources: FAO (1982); Commission of the European Communities

The 1970s also saw the demise of the Bretton Woods arrangements and a marked increase in the instability of commodity prices which, in turn, led ineluctably to a re-examination of the causes of this instability. This review has called into question the conventional wisdom that output shocks due to natural phenomena or man-made disturbances are the primary determinant of price fluctuations. In doing so, it has refocused attention on the importance of macroeconomic factors.

In addition to increased price instability, this review found a high degree of similarity in price movements across the diverse range of primary commodities (fibres, foodstuffs and metals) since the 1970s. This is illustrated by Figure 2, which shows movements in the major components of the commodity price index published by The Economist for the period from 1950 to 1980. Statistical tests infer that the correlation between these three components was not only high but actually increased during the 1970s (see Bond, Crowley and Vlastuin 1983).

These results strongly suggest that something other than supply-side disturbances was driving the price movements. Although the conclusion that macroeconomic factors are responsible is rather obvious, a consensus on the precise relationships has yet to emerge amongst economists; it is, however, clear that seasonal, cyclical, and structural developments are all influential.

Figure 2: MOVEMENTS IN THE ECONOMIST COMMODITY PRICE INDEXES

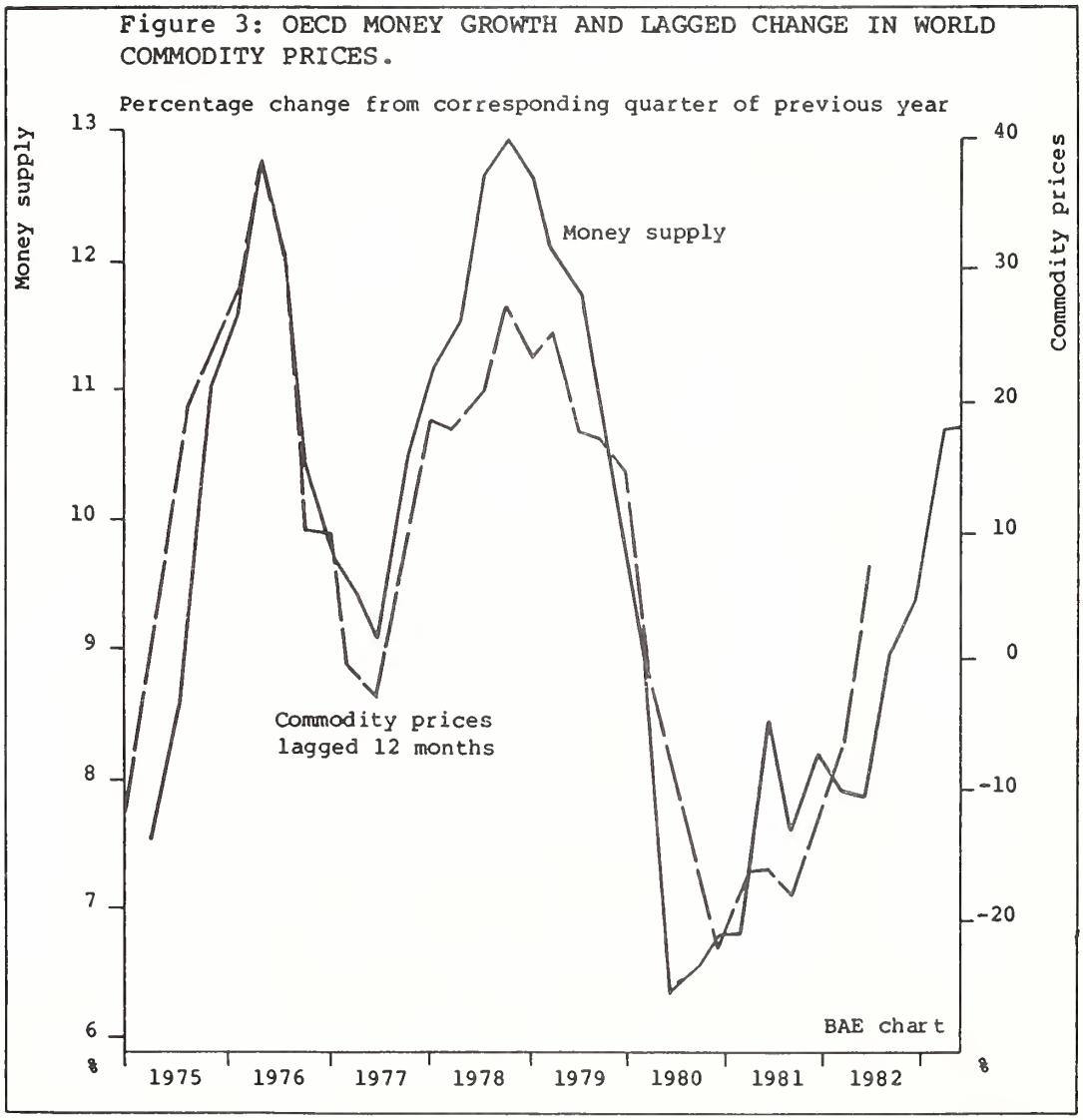


Studies have found that, as expected, there is a relatively strong relationship between economic growth and commodity prices (see Chu and Morrison 1984 and Batten and Belongia 1984). During the recent recession of world economic activity, international commodity prices, in real terms, sank to their lowest level for over 25 years. While there has been some recovery in prices with higher rates of economic growth, their continued weakness is of serious concern to nations, such as Australia, dependent on agricultural trade.

Inventories of industrial materials have been reduced in recent years as a response to the historically high nominal and real rates of interest which followed the low or negative real rates of interest in the 1960s and early 1970s (see The Treasury 1984).

Monetary policy settings in the developed and developing economies seem to have influenced commodity prices via their effects on inflation, economic activity and interest rates. While these linkages are complex and not completely understood, the end result is shown dramatically by the relationship between changes in the money supply in OECD countries (as measured by M1) and the changes which have occurred in commodity prices twelve months later (see Bond, Crowley and Vlastuin 1983). This relationship is readily evident in Figure 3.

Figure 3: OECD MONEY GROWTH AND LAGGED CHANGE IN WORLD COMMODITY PRICES.



The increased volatility of the US dollar exchange rate has probably been translated into greater variation in the world prices of those commodities which are denominated in US dollars (Chu and Morrison 1984). Furthermore, it has been suggested that US commodity exports and stockholdings are strongly influenced by movements in the real value of the US dollar (Longmire and Morey 1983). However, the strength of this relationship has been disputed (Batten and Belongia 1984).

Finally, balance of payments difficulties in exporting and importing countries have encouraged currency depreciations, with concomitant increases in commodity supply and reductions in commodity demand, respectively. The difficulties are largely the product of burgeoning foreign debt, a good deal of which is denominated in US dollars, and have been compounded by the US dollar appreciating in real terms (increasing the real cost of servicing this debt). The significance of this element for agricultural trade, however, is very difficult to estimate.

Against this background, the BAE expects that the rate of economic growth will decline through 1984-85 in the United States and moderate slightly for the OECD. We anticipate that interest rates in the United States during this period to be slightly lower than they were in 1983-84, mostly reflecting expectations that inflation is on the wane and changes in US monetary policy in response to the foreign debt problems of the developing countries, and that the US dollar will remain fairly steady until the end of 1985. These expectations are framed against an assumption that US fiscal policy will remain basically unchanged; if the Administration were to tighter its fiscal stance, interest rate and the US dollar may weaken faster than we anticipate.

Our macroeconomic forecasts herald a very mixed prognosis for commodity demand in 1985. The tailing off in world economic recovery will certainly inhibit any recovery in world commodity trade. This will be reinforced to the extent that the US dollar depreciates against other currencies, thereby encouraging an expansion of US commodity exports. This latter risk is particularly menacing, given the pressure on the Administration to lower the Federal Budget deficit and the large commodity stockholdings in the United States.

THE IMPACTS OF DOMESTIC AGRICULTURAL POLICIES ON AGRICULTURAL TRADE

In addition to these macroeconomic effects, commodity prices have been depressed and destabilised by subsidised over-production and reduced market access. This is particularly so in the developed countries of the Northern Hemisphere. It is to the domestic agricultural policies of these countries that I now wish to turn.

Most agricultural commodities are consumed by countries which produce them; world agricultural trade is very much residual production, at least in aggregate. For example, the following proportions of output entered world trade in 1980: wheat 22 per cent; soybeans 33 per cent; sugar 33 per cent; and beef 7.5 per cent (see White 1984). Hence, the subsidisation of domestic output or reduction of foreign access can have a greatly amplified effect on agricultural trade: international commodity prices will be much lower and much more unstable as a consequence.

In the pantheon of inappropriate domestic agricultural policies, some forms of intervention are worse than others and some countries have the potential to disrupt world agricultural markets more than others. Policies which limit the <u>extent</u> of foreign access to domestic agricultural markets

or provide open-ended export subsidies (the Common Agricultural Policy) involve potentially far greater costs than those which do not, but provide a margin of advantage to their domestic producers (e.g. US support for its cropping industries). Furthermore, when support policies are imposed by economies sufficiently large to affect world prices, then all agricultural producers in the rest of the world are adversely affected.

Like many other countries, Australia assists its agricultural sector and, in a few instances, does so with with access restrictions and/or high levels of protection (e.g. citrus and eggs). However, two features of its agricultural protection should be borne in mind. Firstly, the average effective rate of protection is low and declining, having dropped from 28 per cent in 1970-71 to 8 per cent in 1980-81 (see Industries Assistance Commission 1983). Secondly, Australian (and New Zealand) agricultural producers (and their Governments) are generally unable to influence the prices received for their agricultural products. Even for commodities, such as wheat, where output from the Australian/New Zealand region may be a relatively large share of world trade, the region is a price taker in the international market place. In the case of wheat, this lack of market power is demonstrated by the comparison of Australian and equivalent US wheat prices (see Perkins, Sniekers and Geldard 1984) as in Figure 4.

The domestic agricultural policies to which I refer mostly have objectives quite unrelated to international trade. In fact there is a notable degree of coincidence in the stated objectives of these policies across the wide range of economies which impose them. Typically they have included: the maintenance of farmers' incomes, the security and stability of food supplies and prices and the social integration of the farm and non-farm sectors (see Reeves 1983). Hence, to focus on their impacts, solely beyond the frontiers of the countries which impose them, runs the risk of treating the symptoms rather than the problem.

Without denying the legitimacy of objectives such as these, however, intervention by governments to support their agricultural production entails economic costs. These costs are not, as might be supposed, confined to other agricultural producing countries but also extend to the economies which impose them, very often in quite unexpected ways.

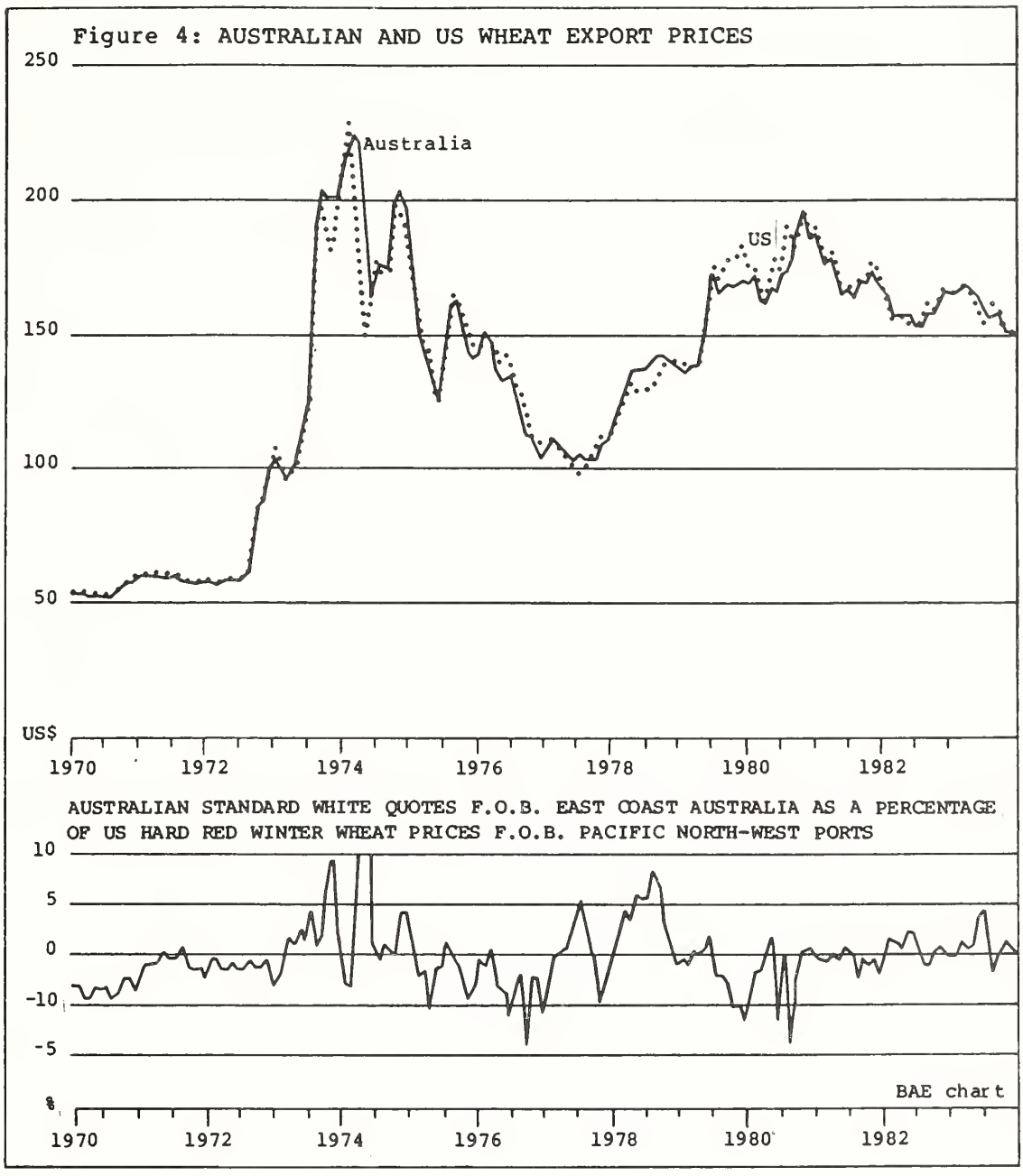
The countries which assist their rural sectors via export subsidies, price support or market access arrangements suffer in a number of ways.

- In the United States, most agricultural price support programs are funded by the Federal Budget so that the costs are reflected in either higher taxes, interest rates or inflation in the United States.

- In the EEC, the Common Agricultural Policy (CAP) results in higher prices to consumers for agricultural commodities. Budgetary outlays on agriculture are estimated to exceed US$32 000m in 1984-85 (see Longmire, Perkins and Coyle 1984).

- Producers in these countries receive returns in excess of market realities and are thereby encouraged to expand production beyond the point where it is economic to do so. The response of production or acreage controls only exacerbates the inefficiencies caused by price support arrangements (see Longmire, Perkins and Coyle 1984).

- The greater the level of price support or the restriction on market access, the more the inefficient producers are encouraged to stay in or move into the industry concerned.



- Returns to producers are effectively determined by administrative fiat and are not automatically adjusted for movements in the world price. There is also a strong tendency for them to be set on a cost-of-production basis and to be ignored.

- Most of the benefits of agricultural support accrue to the larger producers who are generally wealthier and therefore the least in need of income support. Hence, as welfare measures, they are not cost-effective.

- Subsidised domestic production or reduced domestic market access puts upward pressure on a country's exchange rate, with a concomitant reduction in its overall export competitiveness. Paradoxically, domestic agricultural support tends to end up in lower output and therefore higher unemployment in the non-agricultural export sectors of these economies.

Unfortunately, the adverse effects of such domestic agricultural support policies are not confined to the countries which impose them. They also extend inexorably to other agricultural producing countries such as Australia and New Zealand. These policies have acted to limit their access to some markets in the United States, Japan and the EEC, to lower the returns which they receive for their agricultural exports and to exacerbate the instability of those returns. Moreover, Australia and New Zealand have lost valuable export markets in third world countries as a result of subsidised exports, particularly from the EEC, and are conscious of the threat of further losses inherent in the swelling commodity stockpiles.

Numerous studies have confirmed the adverse affects of the domestic agricultural policies of the EEC, the United States and Japan on world markets both in terms of lower world prices and increased price instability. For example, the EEC's CAP has lowered world commodity prices by between 9 per cent and 17 per cent depending on the commodity (see Reeves 1983). Furthermore, the domestic agricultural policies of the United States, Japan and the EEC have together increased the instability of world commodity prices by up to 50 per cent (see Chisholm and Tyers 1984).

POSSIBILITIES FOR CHANGE

Domestic agricultural policies in the United States, Japan and the EEC are under increasing, and somewhat conflicting, pressures: depressed market prices, burgeoning public stocks of agricultural commodities, rapidly increasing costs to taxpayers/consumers and proposals for more protection. The development of the 1985 Farm Bill in the USA has brought these pressures into sharper relief and highlighted possible alternatives to the existing policy arrangements. I would now like to canvass briefly some of these alternatives and their implications.

A change which could be made relatively easily and quickly is to ensure that agricultural support is more market orientated. This could be achieved by eliminating access restrictions and relying on price support which provided a fixed degree of assistance to producers. Such a change would allow the returns received by farmers in the United States, Japan and Europe to move in step with movements in world commodity prices and would stabilise the level of agricultural protection. These, in turn, would

- arrest the tendency for public commodity stocks to increase over time, further depressing and destabilising world commodity prices;
- encourage the structural adjustment of the agricultural sectors concerned to market changes;
- halt the pressure on the US, Japanese and European currencies to appreciate with the collateral disincentives on output and employment in the non-agricultural export sectors of these economies;
- stop the growing displacement of agricultural exports by other agricultural producers, such as Australia and New Zealand, from what had hitherto been profitable markets.

Another, admittedly more adventurous, change would be to substitute more cost-effective policy instruments for the current agricultural support mechanisms. For instance, if the objective is to support the income of farmers, then farmers could be given direct cash supplements which were independent of their returns from agricultural production. This would divorce farm income support from the pricing mechanism and enable it to be provided by whatever instrument was best suited to meeting that

objective. Such a change would expose farmers in the United States, Japan and Europe to competition from the rest of the world and to the full affects of world commodity prices, while delivering whatever income support was deemed to be necessary by other means.

The benefits of such a change would be both greater than those of the previous suggestion and would accrue to developed economies of the Northern Hemisphere and to other agricultural producing nations such as Australia and New Zealand.

- While world commodity prices would probably decrease in real terms in the short term as stocks were quitted, in the longer term they should increase and fluctuate less. This would raise and stabilise returns to producers in the other agricultural producing countries.

- Consumers/taxpayers in the developed north would be relieved of the cost of maintaining extensive and growing commodity stockpiles.

- Farm income support in the developed north could be concentrated on those who are considered to be in need of such relief rather than those who are largely not, as is the case at the moment.

- The agricultural sectors of the developed world would receive unfiltered market signals and thereby be encouraged to adjust to make the most efficient use of their agricultural resources; most notably, it would eliminate the costly and inefficient idling of productive agricultural land.

From what I have said, it might be thought that the virtues of freer trade are not accepted by those who would seek to impose them on others. To the contrary, Australia and New Zealand have for some time appreciated the benefits of and need for freer trade, especially between themselves. Accordingly, 1966 saw the implementation of the New Zealand-Australia Free Trade Agreement (NAFTA) to give practical expression to this mutual appreciation. While trans-Tasman trade was successfully expanded under the auspice of NAFTA, by the mid-1970s its limitations were readily evident and both Governments proceeded to negotiate the Australia-New Zealand Closer Economic Relations (CER) Trade Agreement to replace NAFTA. Whereas NAFTA was introspective and trade diversionary, the CER Trade Agreement (which came into effect in January 1983) is outward looking and aims to encourage the gradual opening up of both economies to international competition, by the progressive elimination of trade barriers.

CONCLUDING COMMENTS

The outlook for world agricultural trade in 1985 is not promising. World economic growth is likely to be sluggish and this, in turn, implies subdued growth in aggregate demand for agricultural imports. Within this overall picture there are, however, some bright spots, especially in relation to the countries on the Pacific Rim. Here, the newly industrialising economies of East and South-East Asia are experiencing relatively healthy economic growth and appear to possess sound prospects for its continuation. This favourable economic perspective should translate into increased import demand for some of those agricultural commodities which are important to exporting nations such as Australia and New Zealand (beef and veal, wool, dairy products).

Chances for improvements in this prognosis are strongly dependent upon decisions of governments. Where macroeconomic policies are set so as to

support and enhance economic growth, governments will foster the growth in demand for agricultural commodities. Where domestic agricultural policies are set so as to allow market forces to operate with maximum effect, governments will encourage the development of agricultural sectors which are capable of meeting those demands in the most cost-effective manner. If governments choose not to set their policies in these ways, then all nations - whether they are importers or exporters of agricultural commodities - will have their economic potential circumscribed.

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AGRICULTURAL TRADE ISSUES: CENTRALLY PLANNED ECONOMIES

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THE SPECTACULAR GROWTH IN U.S. AGRICULTURAL EXPORTS DURING THE 1970'S WAS GENERATED BY EXPANSION OF SALES TO THE DEVELOPING AND CENTRALLY-PLANNED COUNTRIES (CPEs). DURING THAT DECADE, THE SHARE OF TOTAL U.S. AGRICULTURAL EXPORTS FLOWING TO THE DEVELOPED COUNTRIES DECLINED FROM 67 to 50 PERCENT. AT THE SAME TIME THE CPEs' SHARE OF TOTAL U.S. AGRICULTURAL EXPORTS ROSE FROM 3 TO 15 PERCENT. THIS SHARP INCREASE WAS ATTRIBUTED TO SEVERAL FACTORS. FIRST, POOR SOVIET HARVESTS AND THAT GOVERNMENTS'S COMMITMENT TO IMPROVE DIETS TRIGGERED SUBSTANTIAL IMPORTS OF GRAINS, WHILE IMPROVED POLITICAL RELATIONS PERMITTED U.S. EXPORTS TO DOMINATE THE SOVIET MARKET. THE U.S. WAS SUPPLYING MORE THAN 70 PERCENT OF SOVIET GRAIN IMPORT NEEDS BEFORE IMPOSITION OF THE 1980 EMBARGO.

SECOND, THE DETENTE BETWEEN THE U.S. AND SOVIET UNION LED TO IMPROVED RELATIONS AND COMMERCIAL OPPORTUNITIES WITH OTHER EAST BLOC COUNTRIES AT A TIME WHEN THESE GOVERNMENTS SOUGHT TO IMPROVE LIVING STANDARDS. IN THE EASY MONEY PERIOD OF THE 1970'S BANKS WERE WILLING TO LEND READILY INTO EASTERN EUROPE, IN SPITE OF GROWING DEBT BURDENS. ECONOMIC GROWTH RATES EXPANDED, PROPELLED BY EXTERNAL FINANCING. THE U.S. GOVERNMENT PROVIDED ITS SHARE OF ASSISTANCE LARGELY THROUGH COMMODITY CREDIT CORPORATION (CCC) CREDITS AND GUARANTEES AND EXPORT-IMPORT (EX-IM) BANK FINANCING. POLAND, ROMANIA AND HUNGARY WERE ALL ELIGIBLE RECIPIENTS OF THESE OFFICIAL CREDITS/GUARANTEES. YUGOSLAVIA, A COMMUNIST COUNTRY OUTSIDE OF THE EASTERN BLOC, ALSO BENEFITTED.

THIRD, INADEQUATE CROPS AND CHANGES IN GOVERNMENTAL POLICY IN THE PEOPLE'S REPUBLIC OF CHINA (PRC) RAISED DEMAND FOR AGRICULTURAL IMPORTS IN THAT COUNTRY. AT THE SAME TIME, U.S. GOVERNMENTAL RESTRICTIONS ON TRADE WITH THE PRC WERE REMOVED, PERMITTING THE U.S. TO PARTICIPATE IN EXPORTING TO THIS POTENTIALLY LARGE MARKETPLACE. THE U.S. HAD EMBARGOED EXPORTS TO THE PRC BEGINNING IN 1950 AND THIS BAN WAS NOT

LIFTED UNTIL JUNE 1971 WHEN A LIST OF COMMODITIES ELIGIBLE FOR EXPORT TO THE PRC UNDER GENERAL LICENSE WAS PUBLISHED. THIS WAS LIBERALIZED IN FEBRUARY 1972 AND MADE IDENTICAL TO THOSE APPLICABLE TO THE USSR.

THE BRIGHT STORY OF THE 1970'S HAS DARKENED CONSIDERABLY IN THE CURRENT DECADE. ON JANUARY 4, 1980, PRESIDENT CARTER EMBARGOED SHIPMENTS OF U.S. GRAIN TO THE SOVIET UNION AS A SANCTION IN RESPONSE TO THE SOVIET INVASION OF AFGHANISTAN. POLAND, THE LARGEST RECIPIENT OF U.S. EXPORT CREDITS, ENTERED A FINANCIAL CRISIS IN THE WAKE OF SERIOUS INTERNAL POLITICAL AND ECONOMIC TURMOIL WHICH BEGAN IN THE SUMMER OF 1980 WITH THE RISE OF THE SOLIDARITY MOVEMENT. POLAND CARRIED THE LARGEST FOREIGN DEBT IN THE EAST BLOC. WHEN THE SOVIET UNION (USSR) DID NOT PROVIDE AN UMBRELLA TO COVER POLAND'S INTERNATIONAL COMMITMENT, BANKERS BECAME RELUCTANT TO PUT MONEY INTO OTHER EAST EUROPEAN COFFERS AS WELL. BY LATE 1981, WHEN THE POLISH AUTHORITIES DECLARED MARTIAL LAW, NEARLY $700 MILLION OF CCC CREDITS HAD GONE INTO POLAND FOR THAT YEAR ALONE -- COVERING AN ESTIMATED 96 PERCENT OF THAT COUNTRY'S AGRICULTURAL IMPORTS FROM THE U.S. SINCE THAT TIME, POLAND HAS BEEN INELIGIBLE AS A CCC CREDIT RECIPIENT.

MAJOR GLOBAL RECESSION BEGINNING IN 1981 TRIGGERED A DEBT CRISIS THROUGHOUT THE DEVELOPING WORLD, WHICH ADDED TO THE FINANCING PROBLEMS OF EAST BLOC COUNTRIES. DECLINING GROWTH RATES AND SHARP CUTS IN IMPORTS OVER THE PAST FEW YEARS HAVE MARGINALLY REDUCED FOREIGN DEBT BURDENS AND EXPOSURE, BUT ALSO CUT AGRICULTURAL IMPORTS. THE IMPROVEMENT IN U.S. CONTRACT SANCTITY GUARANTEES TO THE SOVIETS, COUPLED WITH THE USSR'S PERSISTENT FAILURE TO ACHIEVE HIGHER GRAIN OUTPUT, HAS LED TO EXPANDED U.S. EXPORTS SINCE THE EMBARGO WAS LIFTED IN 1981. HOWEVER, THE U.S. SHARE OF SOVIET IMPORTS REMAINS AT BARELY 40 PERCENT.

CHINA PROVIDED THE GREATER HOPE FOR AGRICULTURAL EXPORT GROWTH IN THE EARLY PART OF THE 1980'S, PARTICULARLY WHEN A LONG-TERM BILATERAL GRAIN AGREEMENT (LTA) WAS SIGNED IN 1980. HOWEVER, A TREMENDOUS SHIFT IN CHINA'S AGRICULTURAL POLICY AND FAVORABLE WEATHER HAS LED TO A CONTRACTION IN THAT COUNTRY'S AGRICULTURAL IMPORTS, AND A RISE IN CHINESE AGRICULTURAL EXPORTS OVER THE PAST FEW YEARS.

ALL OF THIS HISTORY PROVIDES A FRAMEWORK OF WHERE WE HAVE COME FROM, AS WELL AS INDICATING WHERE WE MAY GO FROM HERE. IT IS CLEAR TODAY THAT WE GENERALLY FINANCED AN ARTIFICIAL DEMAND LEVEL DURING THE 1970'S, FUELLED NOT ONLY BY AGRICULTURAL EXPORT CREDITS, BUT ALSO BY RECYCLED PETRODOLLARS.

NOW, ECONOMIC GROWTH RATES ARE NOT EXPECTED TO RETURN TO THE FEVERISH PACE OF THE PAST DECADE, NOR ARE BANKERS EXPECTED TO RETURN WITH FULL POCKETS TO PRESS FUNDS ON EAST BLOC GOVERNMENTS. THOSE COUNTRIES, MEANWHILE, ARE DETERMINED NOT

TO BE PUT INTO A FURTHER DEBT CRISIS, SO THEY WILL NOT NORMALLY BORROW TO FINANCE CONSUMPTION OF AGRICULTURAL PRODUCTS. THE SOVIET UNION WILL CONTINUE AS THE DOMINANT FORCE IN AGRICULTURAL IMPORTS, WHILE CHINA IS SHAPING UP AS A COMPETITOR IN EXPORT MARKETS FOR SOME COMMODITIES OVER THE NEXT FEW YEARS.

I'D LIKE TO EXAMINE THESE AND OTHER ASPECTS OF THE OUTLOOK FOR TRADE WITH CENTRALLY-PLANNED ECONOMIES (CPEs) FOCUSING PARTICULARLY ON THE SIGNIFICANT FACTORS AFFECTING IMPORTS APART FROM YEAR-TO-YEAR PRODUCTION/CONSUMPTION FUNDAMENTALS.

IT IS IMPORTANT TO REMEMBER THAT OUR AGRICULTURAL EXPORTS TO THESE COUNTRIES DO NOT TAKE PLACE WITHIN A VACUUM. BROAD-RANGING POLITICAL, ECONOMIC FINANCIAL AND TRADE CONSIDERATIONS ALL SUBSTANTIALLY AFFECT COMMERCE, AS OUR RECENT EXPERIENCE DEMONSTRATES SO VIVIDLY.

BASED ON THESE FACTORS, I CANNOT SAY THAT THE SHORT-TERM OUTLOOK IS BRIGHT FOR A MAJOR EXPORT EXPANSION TO THE CPEs. HOWEVER, THE LONG-TERM OUTLOOK MAY BE QUITE DYNAMIC AND HOPEFUL GIVEN THE CURRENT LIVING STANDARDS AND DIETARY LEVEL OF THESE 1.4 BILLION PEOPLE, AS WELL AS THE GROWING DESIRE OF THEIR GOVERNMENTS TO SATISFY CONSUMERS AND ENCOURAGE GREATER PRODUCTIVITY.

USSR

DISCUSSION OF TRADE POTENTIAL WITH THE CPEs MUST BEGIN WITH THE SOVIET UNION, THE LARGEST FACTOR IN TODAY'S MARKETPLACE. IN SPITE OF THE FOOD PROGRAM FIRST ANNOUNCED BY PRESIDENT BREZHNEV IN 1980, WITH DETAILS SPELLED OUT AT A SPECIAL PLENUM IN MAY 1982, SOVIET EFFORTS TO EXPAND GRAIN OUTPUT HAVE SUFFERED. THIS YEAR'S HARVEST IS EXPECTED TO TOTAL ONLY AROUND 170 MILLION METRIC TONS (MMT), WELL BELOW THE CURRENT 5-YEAR PLAN TARGET OF 240 MMT. OVERALL AGRICULTURAL PRODUCTION, HOWEVER, HAS CONTINUED TO RISE, WITH THE SOVIET GOVERNMENT'S AMBITIOUS PROGRAMS TO EXPAND THE SUPPLIES OF MEAT, DAIRY AND POULTRY PRODUCTS FOR CONSUMERS.

TREND LINE PRODUCTION OF GRAIN HAS FALLEN, AND IS NOW BETWEEN 190-195 MMT, WITH THE SHORT-RUN TREND LINE EVEN LOWER. NO EXPANSION IN PLANTED AREA IS EXPECTED OVER THE LONG-RUN WITHOUT A REVERSAL OF THE SOVIET GOVERNMENT'S FALLOW POLICY. THE SOVIETS HAVE JUST RECENTLY ACHIEVED A STATED OBJECTIVE OF AROUND 22 MLN HECTARES (HA) OF FALLOW AND THIS IS NOT LIKELY TO BE ABANDONED. WE SEE ONLY SMALL ADDITIONS TO PLANTED AREA ANNUALLY THROUGH THE REMAINDER OF THIS DECADE, WITH GRAIN PLANTED STABILIZING AT THE 120-121 MLN HA LEVEL IN THE NEAR TERM. IF THE STRESS ON FORAGE CROPS CONTINUES AS EXPECTED, IT COULD MEAN ANNUAL IMPORTS OF 30-35 MMT OF GRAIN FROM ALL ORIGINS TO MAINTAIN CURRENT FEEDING LEVELS. THIS IS COMPARABLE TO RECENT YEARS, AND COULD BE SCALED UPWARDS DEPENDING ON SOVIET CROP

PERFORMANCE. WITHOUT A SUBSTANTIVE CHANGE IN LEADERSHIP OR DIRECTION IN AGRICULTURAL PROGRAMS, NO MAJOR SHIFTS ARE ANTICIPATED WHICH WOULD PERMIT THE SOVIETS TO GREATLY REDUCE THEIR IMPORT DEPENDENCE. WEATHER, OF COURSE, REMAINS A PRIMARY VARIABLE.

SOVIET PROTEIN NEEDS, MEANWHILE, HAVE APPARENTLY BEEN COVERED TO A CONSIDERABLE EXTENT BY CHINA OVER THE PAST YEAR. WE ESTIMATE THAT THE SOVIETS WILL IMPORT 500,000 MT OR MORE SOYBEANS FROM CHINA, DISPLACING SALES FROM THE U.S., EUROPE AND BRAZIL. AS CHINA'S OWN LIVESTOCK FEEDING INDUSTRY EXPANDS THROUGH THE REMAINDER OF THIS DECADE, IT COULD REDUCE CHINESE EXPORTS TO THE USSR AND SHIFT THE SOVIET FOCUS FOR PROTEIN BACK TO THE WEST.

THE U.S. HAS, IN FACT, REGAINED A LARGE SHARE OF THE SOVIET IMPORT SHARE FROM POST-EMBARGO LOWS (AROUND 20 PERCENT), AS THE FOLLOWING TABLE SHOWS (SEE TABLE I), WITH PROJECTED U.S. SALES IN THE CURRENT JULY/JUNE YEAR AT AN ESTIMATED 20.5 MMT (6.8 WHEAT, 13.7 CORN) OUT OF TOTAL SOVIET IMPORTS OF 49 MMT (26.4 WHEAT, 22.4 CORN). THE SOVIETS HAVE LONG-TERM AGREEMENTS WITH MOST OTHER EXPORTERS -- EXCEPTING AUSTRALIA -- TO SUPPLY IN THE AREA OF 29.5 MMT ANNUALLY. U.S. GRAIN SHOULD CONTINUE TO HOLD ITS POSITION IN THIS TRADE, ACCOUNTING FOR RESIDUALLY HIGHER PURCHASES IN SOME YEARS. THE SOVIETS WILL BUY GREATER QUANTITIES OF ARGENTINE WHEAT AT A PRICE, AND FEAR OF LOWER SALES TO THE USSR WILL MOVE ARGENTINE PRICES LOWER TO MAINTAIN THIS IMPORTANT MARKET. AS IS WELL UNDERSTOOD, THE AVAILABILITY OF WHEAT FROM MANY OTHER SOURCES -- CANADA, THE EC, AUSTRALIA, ARGENTINA -- WILL CONTINUE TO EMPHASIZE SOVIET PURCHASES OF FEEDGRAINS FROM THE U.S.

USSR Wheat and Coarse Grain Imports (mmt, Jul-Jun)

	80-81	81-82	82-83	83-84	Agmt. Av. Td.	Est. 84-85
Arg wht	3.0	3.1	4.2	3.6	2.0	2.7
cn	5.4	6.9	2.5	1.4	2.0	2.9
sorg	2.8	3.3	2.9	1.9	2.0	2.4
Aus wht	2.4	2.5	1.0	1.6	1.5	2.0
CG	.5	.0	.0	.1	.0	.2
Can wht	4.5	4.8	6.9	5.8	5.5	7.5
CG	2.3	4.5	1.8	.5	1.5	.4
EC wht	.9	1.7	3.4	3.8	3.0	5.3
bly	.6	.7	.3	.2	.0	.5
Others						
wht	2.1	1.5	1.5	1.5	1.0	2.1
CG	1.7	1.1	1.0	1.3	.5	2.3
Non-US						
wht	12.9	13.6	17.0	16.3	13.0	19.6
CG	13.3	16.5	8.5	5.4	6.0	8.7
Sub T+I	26.2	30.1	25.5	21.7	19.0	28.3
US wht	3.0	6.9	3.0	4.4	5.0	6.8
cn	5.0	8.4	3.2	6.0	5.0	13.7
T+I WHT	15.9	20.5	20.0	20.7	18.0	26.4
CG	18.3	24.9	11.7	11.4	11.0	22.4
TOTAL	34.2	45.4	31.7	32.1	29.0	48.8

SOVIET TRADE OFFICIALS ARE, HOWEVER, CONCERNED ABOUT OVER-DEPENDENCE ON THE U.S. THE LESSON OF THE EMBARGO WILL NOT SOON BE FORGOTTEN, NOR THE TRADE TIES FORGED WITH OTHER SUPPLIERS BROKEN. AT THE SAME TIME, THE SOVIETS ARE POINTING TO THE CONTINUED SUBSTANTIAL TRADE DEFICIT THEY ARE CARRYING WITH THE U.S., AS TABLE II SHOWS.

U.S TRADE BALANCE WITH THE USSR

	U.S. EXPORTS (M $'s)	U.S. IMPORTS (M $'s)
1981	2339	357
1982	2589	229
1983	2002	341
Jan-Aug 1983	1126	202
Jan-Aug 1984	1792	330

Source: U.S. Department of Commerce

DURING THE JANUARY-AUGUST PERIOD OF THIS YEAR, U.S. EXPORTS TO THE USSR TOTALLED NEARLY $1.8 BILLION (CORN, WHEAT AND COTTON ACCOUNTED FOR NEARLY $1.4 BILLION); U.S. IMPORTS DURING THAT SAME PERIOD TOTALLED ONLY $330 MILLION. THE SOVIETS HAVE COMPLAINED ABOUT THESE TRADE IMBALANCES WITH OTHER GRAIN EXPORTING NATIONS AS WELL AS THE US, EXCEPTING THE EUROPEAN COMMUNITY (EC) WHICH IS IN A TRADE POSITION WITH THE USSR DUE TO BIG IMPORTS OF NATURAL GAS.

HOWEVER, COMMERCIAL RELATIONS MAY IMPROVE. BILATERAL TRADE TALKS ARE PLANNED FOR THIS JANUARY IN THE CONTEXT OF THE WORKING GROUP OF EXPERTS CHAIRED ON THE U.S. SIDE BY THE UNDERSECRETARY OF COMMERCE. THIS IS A PRELIMINARY STEP TO RESUMPTION OF THE JOINT COMMERCIAL COMMISSION (JCC) -- A CABINET-LEVEL EXCHANGE WHICH HAS NOT MET SINCE 1978. AT THIS SESSION, THE U.S. WILL EMPHASIZE ITS INTEREST ON EXPANDING NON-STRATEGIC TRADE, PARTICULARLY AGRICULTURAL GOODS, TECHNOLOGY AND EQUIPMENT. THE SOVIETS ARE EXPECTED TO RAISE VARIOUS TRADE ISSUES, INCLUDING U.S. MEASURES SINCE THE EARLY 1970'S TO RESTRICT SOVIET EXPORTS TO THE U.S. CERTAINLY, THE MOST PROMINENT ISSUE IS DENIAL OF MOST-FAVORED NATION (MFN) TARIFF TREATMENT, WHICH MAKES SOVIET GOODS LESS COMPETITIVE IN OUR MARKET. THE JACKSON/VANIK AMENDMENT TO THE TRADE ACT OF 1974 DENIES MFN TO COUNTRIES WITH RESTRICTIVE EMIGRATION POLICIES. DENIAL OF MFN ALSO PROHIBITS ANY OFFICIAL U.S. GOVERNMENT CREDITS OR GUARANTEES. THE SOVIETS HAVE MFN WITH ALL THEIR OTHER AGRICULTURAL TRADING PARTNERS.

OTHER TRADE ISSUES ARE CURRENTLY CAUSING FRICTION AS WELL. A TRADE CASE AGAINST IMPORTS OF SOVIET POTASH TO THE U.S. IS AS YET UNRESOLVED, BUT A PRELIMINARY DECISION BY THE INTERNATIONAL TRADE COMMISSION (ITC) HAS FOUND THE SOVIETS TO BE DUMPING POTASH IN THE U.S. MARKET. AND, A VERY SENSITIVE STUDY BY THE ITC ON FORCED LABOR IS DUE TO BE RELEASED BEFORE THE END OF THIS YEAR. REQUESTED BY THE

SENATE FINANCE COMMITTEE'S CHAIRMAN SENATOR ROBERT DOLE (R-KS) EARLIER THIS YEAR, THE STUDY IS EXPECTED TO CLARIFY THE APPLICATION OF THE FORCED LABOR PROVISION OF THE SMOOT-HAWLEY TARIFF ACT OF 1930. THE U.S. CUSTOMS COMMISSIONER WANTS TO BAN SEVERAL CATEGORIES OF SOVIET IMPORTS FROM THE U.S. ON THE GROUNDS THAT THEY ARE PRODUCED WITH FORCED OR CONVICT LABOR. THIS ACTION IS FAVORED BY HARD-LINERS WHO FAVOR REDUCED COMMERCIAL RELATIONS WITH THE USSR. THE WHITE HOUSE HAS ATTEMPTED TO DETER ACTION, RECOGNIZING NOT ONLY THE DETRIMENTAL IMPACT ON FRAGILE U.S./SOVIET RELATIONS FROM THIS PROTECTIONIST LAW, BUT ALSO THE POTENTIAL TO USE THIS ACT TO AFFECT TRADE WITH OTHER IMPORTANT TRADING PARTNERS LIKE THE PRC.

ON THE AGRICULTURAL SIDE OF TRADE, RECENT U.S./SOVIET GRAIN CONSULTATIONS FOCUSED ON SOVIET COMPLAINTS ABOUT THE QUALITY STANDARDS OF U.S. WHEAT SHIPMENTS IN LIGHT OF THE UNUSUALLY HIGH LEVEL OF INSECT INFESTATION IN EXPORTS THIS SEASON. THERE IS A CLEARLY UNRESOLVED PROBLEM SURROUNDING THE QUALITY OF U.S. GRAIN BOUND FOR SOVIET PORTS DUE TO SOVIET REQUIREMENTS WHICH DO NOT PERMIT THE IN-TRANSIT FUMIGATION CUSTOMARY WITH OTHER COMMERCIAL BUYERS. YET, THE SOVIETS ARE A VERY MAJOR CLIENT OF U.S. EXPORTERS AND THIS IMPLIES THE NEED TO COME UP WITH ADEQUATE PROCEDURES OR ALTERNATIVES TO MEET CONDITIONS, IF FUTURE EXPORTS ARE NOT TO SUFFER. ALTHOUGH SOVIET OFFICIALS AT THE TALKS DID NOT THREATEN TO CUT IMPORTS FROM THE U.S., THEY IMPLIED THAT POSSIBILITY IF THE PROBLEM IS NOT SUFFICIENTLY REMEDIED WITHIN OUR OWN SYSTEM. THE SOVIETS ARE ALSO UNHAPPY ABOUT UNEQUAL TREATMENT FOR THEIR SHIPS AT U.S. PORTS IN THE ABSENCE OF A MARITIME AGREEMENT AND THE BAN ON THEIR OFFICIAL AIRLINE IN THE U.S., IN PLACE SINCE KAL.

EAST EUROPE

IF GRAIN PRODUCTION HOLDS AT RECENT AVERAGE LEVELS AND THERE IS NO RETURN TO A BIG EXPANSION IN LIVESTOCK FEEDING PROGRAMS, IMPORT NEEDS FROM EAST EUROPEAN COUNTRIES WILL LIKELY STABILIZE AT RECENT LOW LEVELS. WHEAT, FEEDGRAIN AND MEAL WILL CONTINUE TO BE IMPORTED AS NEEDED. TODAY'S PRIMARY SUPPLIERS -- THE EC, CANADA AND THE U.S. -- SHOULD CONTINUE TO HOLD. EAST EUROPE'S EXPORTABLE SURPLUS IS LIKELY TO STAY IN THE 1-2 MMT RANGE ANNUALLY, THOUGH IT COULD TOP 2 MMT IN YEARS OF EXCEPTIONAL CROP YIELDS. THE U.S. SHARE OF EAST EUROPEAN IMPORTS HAS DROPPED SUBSTANTIALLY SINCE CREDIT PROGRAMS WERE CUT OFF IN THE EARLY 1980'S. U.S. AGRICULTURAL EXPORTS TO EASTERN EUROPE IN 1983 WERE ONLY 50 PERCENT OF THE 1981 VALUE, WITH THE TOTAL U.S. TRADE SURPLUS TO THIS REGION AT ITS LOWEST LEVEL SINCE 1972.

THE RELATIONSHIP OF U.S. EXPORT CREDITS TO SALES IS AND HAS BEEN THE DOMINANT FACTOR AFFECTING GROWTH IN AGRICULTURAL EXPORTS AND THE U.S. SHARE OF THIS IMPORTANT MARKET. POLAND IS THE MOST STRIKING CASE, AS THE FOLLOWING TABLE (TABLE III) REFLECTS:

U.S. farm exports and CCC credit to Hungary, Poland, Romania, and Yugoslavia, selected fiscal year averages and fiscal 1980-83 annual

Fiscal year[1]	Hungary			Poland			Romania			Yugoslavia		
	U.S. farm exports	CCC credit[2]	CCC share	U.S. farm exports	CCC credit[2]	CCC share	U.S. farm exports	CCC credit[2]	CCC share	U.S. farm exports	CCC credit[2]	CCC share
	Million dollars		*Percent*	*Million dollars*		*Percent*	*Million dollars*		*Percent*	*Million dollars*		*Percent*
1963-1964	12.4	0	0	107.7	8.1	8	.1	0	0	96.3	0	0
1965-1969	6.9	0.9	13	48.6	15.5	32	3.3	0	0	71.4	7.9	11
1970-1974	19.5	0.3	2	134.3	29.7	22	52.2	15.8	30	83.8	26.1	31
1975-1979	35.5	3.2	9	434.0	258.5	60	176.4	41.9	24	101.1	35.1	35
1980	40.5	0	0	676.9	562.9	83	496.6	25.0	5	333.2	54.9	16
1981	8.5	0	0	700.0	[3]670.8	96	477.0	[3]50.0	10	203.9	22.3	11
1982	11.4	0	0	181.4	0	0	135.7	0	0	178.9	0	0
1983	49.0	42.0	86	231.9	0	0	115.0	0	0	249.3	235.0	94

[1]July-June from 1963 to 1977, October-September from 1978. [2]Includes financing under the commercial segment of the Commodity Export Program only. [3]All credit was used in fiscal 1981, but a shipping extension was granted for Polish and Romanian corn purchases, resulting in in $25.2 and $23.9 million of corn, respectively, being shipped in the first quarter of fiscal 1982. These shipments were recorded as exports in fiscal 1982.

Sources: Bureau of the Census, U.S. Dept. of Commerce, FAS/USDA.

CCC CREDITS WERE VITAL IN DEVELOPING THAT MARKET IN THE 1970'S. DEMAND FOR LIVESTOCK PRODUCTS EXISTS TODAY, BUT IT WILL HAVE TO BE AIDED IN THE FUTURE BY CONCESSIONAL SALES. THE QUESTION IS WHETHER WE ARE PREPARED POLITICALLY AGAIN TO DO THIS TYPE OF BUSINESS IN THE EAST BLOC. I DON'T THINK WE ARE TODAY -- FOR BOTH POLITICAL AND FINANCIAL REASONS -- IN ANYTHING MORE THAN A LIMITED DEGREE. AT THE SAME TIME, THE U.S. DECISION TO CUT OFF CREDITS TO SEVERAL OF THESE COUNTRIES BECAUSE OF THEIR POLITICAL ALLIANCE WITH THE SOVIETS SUGGESTS THAT THEY WILL BE RELUCTANT IN THE FUTURE TO PURSUE SIMILAR IMPORT-FED GROWTH AS IN THE PAST DECADE. FINANCING SUBSTANTIALLY HIGHER CONSUMPTION LEVELS THROUGH CREDITS HAS PROVEN VERY COSTLY TO THESE GOVERNMENTS.

TODAY, SEVERAL OF THE EAST EUROPEAN DEBTOR COUNTRIES HAVE BEEN ABLE TO MANAGE THEIR DEBT SERVICE THROUGH ECONOMIC ADJUSTMENT AND DEEP IMPORT CUTS. HUNGARY, THE GDR AND ROMANIA AS WELL ARE PARTICULARLY NOTED. THIS HAS AGAIN MADE THEM ATTRACTIVE TO THE INTERNATIONAL BANKING COMMUNITY. ECONOMIC GROWTH IN THE REGION WILL BE PARTICULARLY IMPORTANT IN CONTINUED PROGRESS REDUCING EXTERNAL DEBT AND EXPANDING DEMAND FOR FOOD AND OTHER GOODS. GROWTH RATES FOR THE SIX EAST BLOC COUNTRIES (BULGARIA, CZECHOSLOVAKIA, EAST GERMANY, HUNGARY, POLAND AND ROMANIA) AVERAGED 10 PERCENT IN 1979; THIS DROPPED SHARPLY TO A NEGATIVE 1 PERCENT IN 1980 AND 1981 AND IS ONLY BEGINNING TO EDGE BACK UP, WITH AVERAGE GNP IN 1983 AROUND 2 PERCENT.

AS ECONOMIC CONDITIONS IMPROVE, THESE COUNTRIES MAY AGAIN TURN TO THE INTERNATIONAL MARKETS TO FINANCE EXPANSION. HOWEVER, THEY ARE MORE LIKELY TO FOCUS PRIMARILY ON BORROWING FOR CAPITAL INVESTMENT, RATHER THAN CURRENT CONSUMPTION, UNLESS A CROP DISASTER FORCES THEM TO SPEND HARD CURRENCY OR UNDERTAKE MORE INDEBTEDNESS TO FINANCE FOOD IMPORTS.

WITH STAGNANT IMPORT GROWTH EXPECTED, THE U.S. IS NOT LIKELY TO BENEFIT GREATLY DUE TO THE MEAGRE FLOW OF CCC CREDITS INTO THE REGION -- AND, HERE, LARGELY OUTSIDE THE BLOC TO YUGLOSLAVIA. IT MUST ALSO BE REMEMBERED, THAT ONLY HUNGARY AND ROMANIA TODAY HAVE MFN, (POLAND'S WAS SUSPENDED DUE TO MARTIAL LAW) AND THAT THESE COUNTRIES LIKE THE SOVIET UNION, ARE CONCERNED ABOUT EXPORT OPPORTUNITIES WITH TRADING PARTNERS. EAST GERMANY (GDR), FOR EXAMPLE, HAS LONG HAD A SPECIAL COMMERCIAL RELATIONSHIP WITH THE EC. RECENTLY THE GDR HAS SHOWN A PREFERENCE TO BUY FROM CANADA AS WELL, BECAUSE THAT COUNTRY SIGNED A BILATERAL TRADE AGREEMENT LAST YEAR GRANTING MFN TO THE GDR, AS WELL AS GRAIN SALES ACCORD. POSSIBLE GAINS FOR THE U.S. COULD COME ABOUT PRIMARILY IF U.S. FIRMS ARE ABLE TO PUT TOGETHER COUNTER-TRADES OR VARIOUS TYPES OF OFFSET TRANSACTIONS. HOWEVER, IF THE BROAD PERSPECTIVE OF EAST-WEST RELATIONS IMPROVES, AS SEEMS APPARENT TODAY, AND IF THE U.S. DECIDES TO FUND GSM 301 INTERMEDIATE CREDITS OR WRITE A NEW GUARANTEE PROGRAM TYING COMMODITY EXPORTS TO FACILITIES AND INFRASTRUCTURE EXPANSION, A NEW PHASE OF MARKET DEVELOPMENT COULD BEGIN IN THESE IMPORTANT CONSUMING COUNTRIES.

CHINA

TRADE ISSUES ARE PREDOMINANT IN CHINA'S AGRICULTURAL DEALINGS WITH THE U.S. PROBLEMS OVER THE U.S. TEXTILE QUOTA HAVE REDUCED U.S. GRAIN EXPORTS OVER THE PAST FEW YEARS. HOWEVER, CHINA'S FAILURE TO FULFILL THE TERMS OF THE LTA IN BOTH 1983 AND 1984 STEMS AS MUCH, IF NOT MORE, FROM THAT COUNTRY'S SURPLUS PRODUCTION. IN OTHER WORDS, THE TEXTILE ISSUE WAS A CONVENIENCE FOR LEVERAGE WHICH WOULD NOT LIKELY HAVE BEEN LINKED TO GRAIN PURCHASES HAD RECORD PRODUCTION NOT BEEN THE CASE WITHIN CHINA.

WE ARE ASSUMING AT LEAST AVERAGE CROPS IN CHINA OVER THE NEXT FEW YEARS, BELOW THE 1984 RECORD OF 400 MMT BUT IN THE 360-375 MMT RANGE. GIVEN SLOW IMPROVEMENTS IN INTERNAL STORAGE, TRANSPORTATION AND DISTRIBUTION AS WELL AS PORT FACILITIES, AND SLOW, BUT STEADY GROWTH IN THE FEEDING INDUSTRY, CHINA IS NOT LIKELY TO BE A DOMINANT FORCE ON THE IMPORT SIDE. WHEAT IMPORTS WILL CONTINUE, BUT LIKELY ONLY AT THE 8-9 MMT LEVEL FROM ALL SOURCES. EXPORTS OF FEED-GRAINS (CORN) SHOULD CONTINUE ON AN "AS AVAILABLE" BASIS, UNTIL INTERNAL DEMAND INCREASES. CURRENT LEVEL OF CORN EXPORTS THIS YEAR ARE AT AN ESTIMATED 2 MMT (ABOUT DOUBLE LAST YEARS), MAINLY TO JAPAN, SOUTH KOREA AND THE SINGAPORE MARKET. CHINA HAS ALSO EXPORTED SOYBEANS AND PRODUCTS, AND HAS TURNED FROM AN IMPORTER TO EXPORTER OF COTTON. A TABLE OF CHINA'S GRAIN IMPORTS IS AS FOLLOWS (TABLE IV):

CHINA: GRAIN IMPORTS, JULY-JUNE, MLN MT

	80-1	81-2	82-3	83-4	AGMT DATE AV TD	84-5 EST
Arg wht	.2	.2	2.0	1.0	.7-1	.0
C gr	.0	*	.2	.1	.3-.5	.0
	.2	.2	2.2	1.1	12/84	.0
Aust wht	1.4	1.4	1.2	1.5	1.5-2.5	2.1
bly	*	.1	.0	.1	.0	.1
	1.4	1.5	1.2	1.6	12/84	2.2
Can wht	2.9	3.0	4.3	3.7	3.5-4.2	2.9
bly	.0	.1	.1	*	.0	.1
	2.9	3.1	4.4	3.7	7/85	3.0
EC wht	.6	.1	.1	.2	.0	.0
Thai cn	.1	.1	.1	.1	annual	.1
Non-US						
wht	5.1	4.7	7.6	6.4	5.7-7.7	5.0
C gr	.1	.3	.4	.3	.4-.6	.3
	5.2	5.0	8.0	6.7	6.1-8.3	5.3
US wht	8.7	8.4	4.1	3.2	5.3-6.8	5.0
cn	.7	1.0	2.3	.0	.7-1.2	.0
	9.4	9.4	6.4	3.2	6.0-8.0	5.0
TOTAL						
wht	13.8	13.1	11.7	9.6	11-14.5	10.0
C gr	.8	1.3	2.7	.3	1.1-1.8	.3
	14.6	14.4	14.4	9.9	12.1-16.3	10.3

* less than 50,000 mt

THE U.S. LTA WILL LAPSE ON DECEMBER 31, 1984, OR AT LEAST IT WILL NOT BE RENEWED UNTIL CHINA COMPLIES WITH THE MINIMUM IMPORTS UNDER THE CURRENT AGREEMENT. BILATERALS WITH OTHER EXPORTERS -- AUSTRALIA AND ARGENTINA -- ALSO RUN OUT THIS YEAR. BY THE FALL OF 1985, THE CANADIAN AGREEMENT WILL BE COMPLETE. IT IS NOT LIKELY THAT CHINA WOULD SEEK TO HAVE AN LTA WITH ONLY ONE OF THE MAJOR EXPORTERS, WITHOUT PROVIDING FOR AN ARRANGEMENT WITH THE OTHERS. ANY NEGOTIATION OF NEW AGREEMENTS WOULD UNDOUBTEDLY BE AT LOWER LEVELS THAN THE LAST ROUND, GIVEN THE HIGHER LEVELS OF INTERNAL GRAIN PRODUCTION RECENTLY ACHIEVED. THE CHINESE WILL NO DOUBT DEMAND CONSIDERABLE FLEXIBILITY IN HOW THEY MUST MEET TERMS SET OVER THE LIFE OF THE ACCORDS, AND WILL SEEK BROADER ESCAPE CLAUSES ON FULFILLING AGREEMENTS.

IN THE CASE OF CHINA, RATHER THAN LOOKING FOR GREATLY EXPANDED EXPORT MARKET POTENTIAL OVER THE SHORT-TERM, THE MORE LIKELY EXPORT OPPORTUNITIES WILL BE IN TRANSFERS OF U.S. TECHNOLOGY AND INVESTMENT IN CHINA'S AGRICULTURAL INFRASTRUCTURE. FOREIGN AND INTERNAL INVESTMENT IS LIKELY TO INCREASE THE PRC'S ABILITY TO CONSUME ITS PRODUCTION. THE MOST POSITIVE FACTOR FOR FUTURE IMPORT POTENTIAL IS THE CHINESE GOVERNMENT'S EXPANDED COMMITMENT TO INCREASE URBAN

INCOMES, OPEN UP THE ECONOMY TO GREATER MARKET FORCES AND IMPROVE THE AVAILABILITY OF CONSUMER GOODS, INCLUDING FOODSTUFFS. MEAT OUTPUT HAS MORE THAN DOUBLED SINCE 1970; PER CAPITA MEAT SUPPLIES ARE UP NEARLY THAT MUCH. SHOULD THERE BE A SERIOUS CROP PROBLEM WITHIN CHINA, IMPORTS WOULD BE NEEDED TO COVER DEMAND REQUIREMENTS, PARTICULARLY IN URBAN CENTERS. IT'S IMPORTANT TO REMEMBER THAT CHINA'S AGRICULTURAL TURNAROUND WAS VERY MUCH AIDED BY GENERALLY FAVORABLE WEATHER.

CHINA WILL CONTINUE TO EXPAND ITS ECONOMY ON A VERY CAUTIOUS BASIS AND IS NOT LIKELY TO USE INTERNATIONAL FINANCING TO PUSH FOR RADICAL OR SWIFT ADVANCEMENT. IN FACT, THE LEADERSHIP APPEARS COMMITTED TO MAINTAINING A VERY HEALTHY BALANCE IN CHINA'S FAVOR IN ITS EXTERNAL TRADE ACCOUNT.

UNLIKE THE SOVIET UNION, CHINA IS CARRYING A VERY FAVORABLE BALANCE IN ITS BILATERAL ACCOUNT WITH THE U.S., AS THE FOLLOWING TABLE SHOWS (TABLE V):

U.S. TRADE BALANCE WITH CHINA

	U.S. EXPORTS		U.S. IMPORTS
1980	3.750 B	75-80% of	1.054 B
1981	3.603 B	exports agric. commodities	1.892 B
1982	2.912 B		2.084 B
1983	2.173 B	approx 75% of	2.244 B
Jan-Sept 1983	1.432 B	exports are manu-	1.679 B
Jan-Sept 1984	2.016 B	factured goods	2.372 B

Source: U.S. Department of Commerce

FOR THE CURRENT YEAR, CHINA'S EXPORTS TO THE U.S. STAND AT $2.37 BILLION (JAN-SEPT), WHILE ITS IMPORTS TOTAL $2.02 BILLION (JAN-SEPT). THIS IS A REVERSAL OF THE TRADE BALANCE OF THE PAST FEW YEARS. THIS WOULD SUGGEST THAT THE U.S. IS IN A VERY GOOD POSITION TO BARGAIN WITH CHINA OVER MORE FAVORABLE OPPORTUNITIES TO EXPORT, BUT THE CHINESE HAVE BEEN CONSISTENTLY TOUGH NEGOTIATORS IN THIS REGARD. AT THE SAME TIME, THE U.S. AGRICULTURAL LOBBY HAS BEEN FRIGHTENED ABOUT ESTRANGING CHINA IN THE TRADE FRAMEWORK, DUE TO THE LONG-TERM POTENTIAL PERCEIVED IN THIS ONE BILLION PLUS CONSUMER MARKETPLACE.

GIVEN CHINA'S DESIRE TO EXPAND OVERSEAS SALES, THERE COULD BE A PERIOD AHEAD OF INCREASING TRADE FRICTIONS, NOT ONLY DUE TO TEXTILES, BUT ALSO DUE TO THE GREAT STRIDES CHINA HAS MADE IN EXPANDING OTHER SENSITIVE GOODS TO THE U.S. MARKET, PARTICULARLY BASIC CHEMICALS, FOOTWEAR AND CERAMICS.

CONCLUDING OBSERVATIONS

GROWTH IN TRADE WITH THE CPEs CAN ONLY EXPAND AS POLITICAL RELATIONS IMPROVE WITH THE EAST BLOC, AND AS ECONOMIC GROWTH EXPANDS IN THESE COUNTRIES AND THROUGHOUT THE WORLD.

THE TREMENDOUS JUMP IN U.S. TWO-WAY TRADE WITH THE PRC OVER THE PAST DECADE HAS EVOLVED FROM THE FRIENDLY, THOUGH NON-ALIGNED STATUS OF THE CURRENT BILATERAL RELATIONSHIP. THIS IS NOT LIKELY TO TURN AROUND, GIVEN THE CHINESE GOVERNMENT'S COMMITMENT TO ENORMOUS CHANGES TOWARD DECENTRALIZATION AND MARKET-ORIENTATION WITHIN THE ECONOMY. CHINA'S ECONOMY, MOREOVER, IS VERY ATTRACTIVE TO FOREIGN INVESTORS, IT CARRIES A STRONG CURRENT ACCOUNT BALANCE AND MAINTAINS SUBSTANTIAL GOLD RESERVES. BANKERS WILL HAVE NO TREPIDATION ABOUT PROVIDING FINANCING FOR CAPITAL DEVELOPMENT IN THIS COUNTRY. IT IS CHINA THAT WILL DETERMINE ITS OWN LEVEL OF BORROWING NEEDS AND ECONOMIC EXPANSION.

POLITICAL RELATIONS WITH THE SOVIETS AND THEIR EAST BLOC NEIGHBORS REMAIN UNCERTAIN, ALTHOUGH THEY HAVE IMPROVED IN RECENT MONTHS. BOTH THE U.S. AND SOVIET LEADERSHIP NOW APPEAR POISED TO MOVE AHEAD ON A PATH OF CONSTRUCTIVE DIALOGUE AND NEGOTIATION, BUT MAJOR AMBIGUITIES REMAIN IN ASSESSING THE RELATIONSHIP. AFGHANISTAN AND POLAND ARE CONTINUED PROBLEMS, AS IS CENTRAL AMERICA. WITHIN THE U.S. GOVERNMENT THERE ARE THOSE WHO WOULD LIKE TO SEE NO RELATIONSHIP AT ALL WITH THE SOVIETS, INCLUDING AGRICULTURAL TRADE. AS DISCUSSED EARLIER, THERE ARE SIGNIFICANT BARRIERS (BOTH STRATEGIC AND ECONOMIC) TO EXPANDING TWO-WAY TRADE. THE SOVIET UNION CAN RECEIVE NO OFFICIAL CREDITS AND IS INELIGIBLE FOR MFN TARIFF TREATMENT. EFRORTS TO REVISE THOSE PROVISIONS IN 1979, WHEN CHINA WAS GRANTED MFN, WERE NOT SUCCESSFUL. IT MAY BE POSSIBLE TO RAISE THE ISSUE AGAIN IF BILATERAL RELATIONS IMPROVE OVER THE NEXT FEW YEARS, AND PERHAPS ALTER THE CONDITIONS UNDER WHICH MFN AND CREDITS CAN BE GRANTED. HOWEVER, THIS WILL NOT COME ABOUT EASILY OR QUICKLY.

FEW EAST EUROPEAN COUNTRIES -- ONLY ROMANIA AND HUNGARY -- CURRENTLY HAVE MFN. THE NATURAL TRADING POSITION OF THE EAST BLOC WITH WEST EUROPE WILL CONTINUE TO DOMINATE COMMERCIAL RELATIONS. THEIR DECISION TO IMPORT FROM THE U.S. OR THE WORLD MARKET GENERALLY WILL DEPEND UPON AN ADEQUATE HARD CURRENCY AND TRADE POSITION. THE PERIOD AHEAD WILL FOCUS CONTINUED EMPHASIS ON COUNTERTRADE AND BILATERAL ARRANGEMENTS WHEREVER POSSIBLE.

I THINK WE WOULD BE FOOLING OURSELVES TO BELIEVE THAT A RETURN TO EASY MONEY POLICIES OF THE 1970'S WOULD BE GOOD FOR OUR MARKET. OUR OVERDONE CREDITS GAVE A FALSE SIGNAL TO EXPAND, BASED ON INFLATED PROJECTED CONSUMPTION LEVELS. HOWEVER, I DO BELIEVE THAT OPPORTUNITIES EXIST TO INCREASE U.S. AGRICULTURAL EXPORTS TO THESE COUNTRIES OVER TIME, AS WE HELP THEM TO ACHIEVE HIGHER RATES OF ECONOMIC GROWTH. THIS, OF COURSE, IMPLIES THE NEED TO BUY FROM THEM, TO OPEN OUR TRADE WITH THEM MORE FULLY ON A BILATERAL BASIS. IT

IMPLIES A COMMITMENT TO PROVIDING CAPITAL AND KNOW-HOW IN DEVELOPING THEIR INFRASTRUCTURE AS WELL AS OFFICIAL FINANCING FOR SOME SALES OF COMMODITIES.

MY TOPIC TODAY WAS FOCUSED ON THE CPEs, BUT I WANT TO CLOSE ON THE NOTE THAT IT IS ONLY THROUGH MARKET DEVELOPMENT AND GLOBAL GROWTH THAT THE U.S. WILL EXPAND ITS AGRICULTURAL POTENTIAL. IT IS TIME WE TAILORED OUR RESOURCES AND INITIATIVES TO THESE OBJECTIVES. THE CPEs STAND HIGH ON THE DEVELOPING COUNTRY SCALE. THEY ARE A MARKETPLACE WHICH CAN BECOME A MAJOR IMPORTER OF GRAINS AND OTHER RAW AGRICULTURAL PRODUCTS, AS WELL AS PROCESSED COMMODITIES AND OTHER FOODSTUFFS. THESE ARE NOT COUNTRIES AT THE BOTTOM END OF THE SCALE, SCRATCHING TO MAINTAIN SUBSISTENCE DIETS FOR MUSHROOMING POPULATIONS. THESE COUNTRIES, PARTICULARLY THOSE IN EASTERN EUROPE, ARE STRIVING TO ACHIEVE THE DIETARY STANDARDS OF THE WEST. THIS WILL NOT HAPPEN OVERNIGHT, BUT NOW IS THE TIME WHEN WE MUST BEGIN PUTTING THOSE POLICIES IN PLACE FOR WHAT WE HOPE TO ACHIEVE BY THE END OF THIS DECADE.

THANK YOU.

SPEECH TITLE: PROTECTIONISM AND SUBSIDIZED EXPORTS IN DEVELOPED COUNTRIES: THE IMPACT ON U.S. AGRICULTURAL EXPORTS

OUTLOOK '85



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THE TOPIC I HAVE BEEN ASKED TO DISCUSS IS A FAMILIAR ONE TO THIS GROUP AND ONE THAT HAS BEEN THE SUBJECT OF CONSIDERABLE RESEARCH. IT IS ALSO ONE THAT HAS ASSUMED GREATER URGENCY IN THE FACE OF AN ABRUPT DOWNTURN IN U.S. AGRICULTURAL EXPORTS AND SERIOUS FARM INCOME PROBLEMS IN THE U.S. THE ATTENTION DEVOTED TO IT, HOWEVER, DOES NOT SEEM TO HAVE RENDERED THE PROBLEMS ASSOCIATED WITH AGRICULTURAL PROTECTIONISM AND SUBSIDIZED EXPORTS ANY MORE TRACTABLE, AND, THE PROGRESS THAT HAS BEEN MADE IN INTERNATIONAL ORGANIZATIONS SUCH AS THE GATT (GENERAL AGREEMENT ON TARIFFS AND TRADE) CAN BE GENEROUSLY DESCRIBED AS MEAGER. ALTHOUGH THERE HAVE RECENTLY BEEN SOME HOPEFUL SIGNS -- ABOUT WHICH I WILL HAVE MORE TO SAY LATER.

MY PRESENTATION WILL BE DIVIDED INTO TWO PARTS. FIRST, I WILL MAKE A FEW OBSERVATIONS ON THE PROTECTIONIST POLICIES AND UNFAIR TRADE PRACTICES SO PREVALENT IN WORLD AGRICULTURAL TRADE AND DISCUSS THE IMPACT OF THOSE POLICIES ON U.S. AGRICULTURAL EXPORTS. SECONDLY, I WILL TALK ABOUT THE ADMINISTRATION'S EFFORTS TO CORRECT THIS SITUATION.

THE KEY POINTS I WOULD LIKE TO MAKE CAN, I THINK, BE BOILED DOWN TO THE FOLLOWING: (1) ALTHOUGH THE DISAPPOINTING PERFORMANCE OF U.S. AGRICULTURAL EXPORTS IN RECENT YEARS CAN LARGELY BE ATTRIBUTED TO FACTORS OUTSIDE OF THE REALM OF AGRICULTURAL TRADE POLICY, IN THE LONGER TERM TRADE POLICY DEVELOPMENTS ARE AN EXTREMELY IMPORTANT DETERMINANT OF U.S. EXPORT PERFORMANCE; (2) THIS ADMINISTRATION ACCORDS THE RESOLUTION OF AGRICULTURAL TRADE POLICY PROBLEMS A HIGH PRIORITY AND IS DETERMINED TO ENSURE THAT THESE PROBLEMS ARE ADDRESSED IN AN EFFECTIVE MANNER DURING ITS SECOND TERM.

IN DISCUSSING AGRICULTURAL POLICIES AND THEIR IMPACT ON TRADE, I WILL FOCUS ON THE EUROPEAN COMMUNITY (EC) AND JAPAN. I THINK THIS IS INEVITABLE. BOTH ARE HUGE MARKETS FOR U.S. AGRICULTURAL PRODUCTS. IN 1983, THE EC IMPORTED $7.3 BILLION AND JAPAN $6.2 BILLION OF U.S. AGRICULTURAL PRODUCTS. MOREOVER, THE EC IS A MAJOR AGRICULTURAL PRODUCER AND EXPORTER OF AGRICULTURAL PRODUCTS -- EC AGRICULTURAL

EXPORTS TO NON-EC COUNTRIES TOTALED $24 BILLION IN 1983 -- AND IT HAS USED EXPORT SUBSIDIES LAVISHLY TO EXPAND THIS TRADE.

BUT WE SHOULD NOT FALL INTO THE HABIT OF THINKING THAT PROTECTIONIST AGRICULTURAL POLICIES OR EXPORT SUBSIDIES ARE EXCLUSIVELY THE FAULT OF ONE OR BOTH OF THOSE COUNTRIES. LAST YEAR, THE GATT COMMITTEE ON TRADE IN AGRICULTURE REVIEWED THE RANGE OF GOVERNMENT ACTIONS THAT IMPEDE AND DISTORT AGRICULTURAL TRADE. THE COMMITTEE'S CONCLUSION WAS THAT VIRTUALLY EVERY COUNTRY, INCLUDING CANADA, AUSTRALIA, THE U.S. AND OTHERS GENERALLY DEEMED COMPETITIVE AGRICULTURAL PRODUCERS, HAD ERECTED SIGNIFICANT IMPEDIMENTS TO THE FREE INTERNATIONAL MOVEMENT OF AGRICULTURAL GOODS. TO ILLUSTRATE FURTHER, MOST OF THE NON-EC EUROPEAN COUNTRIES (E.G., THE NORDIC COUNTRIES, SWITZERLAND) MAINTAIN PRICE SUPPORT SYSTEMS FOR GRAIN, DAIRY, AND OTHER AGRICULTURAL PRODUCTS AS HIGH OR HIGHER THAN IN THE EC, AND THE DEVICES USED TO PROTECT THESE SYSTEMS ARE JUST AS PROTECTIVE AS THE EC'S VARIABLE LEVY SYSTEM.

NOR, DESPITE THE TITLE OF THIS PRESENTATION, SHOULD AGRICULTURAL PROTECTIONISM OR SUBSIDIZED EXPORTS BE REGARDED AS EXCLUSIVELY A DEVELOPED COUNTRY PROBLEM. IN SOME OF THE MORE ADVANCED DEVELOPING COUNTRIES, WE SEE EXCESSIVE PRICE SUPPORT SYSTEMS SIMILAR TO THOSE IN SOME OF THE DEVELOPED COUNTRIES BEGINNING TO EVOLVE WITH THE SAME UNFORTUNATE EFFECTS. FOR EXAMPLE, TAIWAN PROVIDES A PRICE GUARANTEE TO ITS RICE FARMERS ABOUT 2-3 TIMES WORLD MARKET PRICES: THE RESULT HAS BEEN THE EMERGENCE OF TAIWAN AS A SIGNIFICANT RICE EXPORTER. AND, IN MOST DEVELOPING COUNTRIES, OUR AGRICULTURAL EXPORTS, ESPECIALLY SPECIALTY CROPS AND PROCESSED PRODUCTS, FACE AN ARRAY OF HIGH TARIFFS AND NON-TARIFF BARRIERS. THESE BARRIERS BECOME MORE IMPORTANT, AND LESS TOLERABLE, AS THESE COUNTRIES ADVANCE ECONOMICALLY.

SIMILARLY, WITH RESPECT TO EXPORT SUBSIDIES, WE HAVE SEEN HOW THE USE OF VARIOUS FORMS OF PRODUCTION AND EXPORT SUBSIDIES, SOMETIMES COMBINED WITH A DIFFERENTIAL EXPORT TAX STRUCTURE, HAS ENABLED DEVELOPING COUNTRIES SUCH AS BRAZIL TO EXPAND AGRICULTURAL EXPORTS AT THE EXPENSE OF THE U.S.

BUT CLEARLY ANY DISCUSSION OF THE PROBLEMS OF AGRICULTURAL PROTECTIONISM AND AGRICULTURAL EXPORT SUBSIDIES MUST FOCUS LARGELY ON THE EC AND, TO A LESSER EXTENT, JAPAN -- IN VIEW OF THE SIZE OF THEIR MARKETS AND THEIR AGRICULTURAL INDUSTRIES, AS WELL AS THEIR STRATEGIC IMPORTANCE IN INFLUENCING ANY EFFORT TO BETTER THIS SITUATION BY IMPROVING INTERNATIONAL RULES ON AGRICULTURAL TRADE. IN BOTH JAPAN AND THE EC, PROTECTIONISM AND EXPORT SUBSIDIZATION ARISE FROM EFFORTS TO MAINTAIN DOMESTIC PRICES AT LEVELS WELL ABOVE WORLD PRICE LEVELS. IN JAPAN, FOR EXAMPLE, RICE

FARMERS ARE GUARANTEED A PRICE NEARLY $1,000 MT ABOVE WORLD MARKET PRICE LEVELS. JAPANESE BEEF PRICES ARE MAINTAINED AT LEVELS 2-3 TIMES HIGHER THAN PRICES IN THE U.S. SUCH POLICIES CLEARLY HAVE AN IMPACT. IN 1983, PER CAPITA BEEF AND VEAL CONSUMPTION WAS ONLY 8.74 LBS. AS COMPARED TO 79 LBS. IN THE U.S. IN THE EC, ON THE OTHER HAND, GRAIN PRICES HAVE TYPICALLY BEEN MAINTAINED AT LEVELS 30 - 50 PERCENT HIGHER THAN WORLD PRICES. SIMILAR SITUATIONS PREVAIL WITH RESPECT TO BEEF, POULTRY, SUGAR, AND DAIRY PRODUCTS.

PRICE SUPPORT MECHANISMS WHICH MAINTAIN DOMESTIC FARM PRICES WELL ABOVE WORLD PRICE LEVELS ARE THE CHARACTERISTIC CAUSE OF PROTECTIONISM IN THE AGRICULTURAL SECTOR. IN THEORY, SUCH SUPPORT COULD BE MAINTAINED THROUGH DIRECT SUBSIDIZATION OF PRODUCERS. BUT TYPICALLY THE BUDGET EXPOSURE RESULTING FROM SUCH PROGRAMS IS NOT CONSIDERED POLITICALLY ACCEPTABLE AND THE COSTS OF THE PROGRAMS ARE HIDDEN BY, FIRST, INSULATING THE INDUSTRY FROM ALL FOREIGN COMPETITION AND, SECONDLY, WHERE PRODUCTION BECOMES TOO ONEROUS, BY DUMPING THE EXCESS ON WORLD MARKETS. THE PROTECTIONIST DEVICES FAVORED BY JAPAN ARE QUOTAS, LICENSING, AND A RANGE OF HARD-TO-GET-AT ADMINISTRATIVE CONTROLS; THE EC, OF COURSE, MAKES PERVASIVE USE OF THE VARIABLE LEVY SYSTEM, WHICH EFFECTIVELY ELIMINATES ANY PRICE COMPETITION FROM IMPORTS, AND SINCE 1975 HAS PAID $5-7 BILLION ANNUALLY IN EXPORT SUBSIDIES.

AGRICULTURAL PROTECTIONISM AND THE RESORT TO EXPORT SUBSIDIES ALTER THE BASIC PRODUCTION AND CONSUMPTION PATTERNS FOR AGRICULTURAL COMMODITIES. THEY ADVERSELY AFFECT THE U.S. AND OTHER COMPETITIVE AGRICULTURAL EXPORTING COUNTRIES IN THE FOLLOWING WAYS:

1. REDUCTION OF EXPORT VOLUME -- RESULTING BOTH FROM THE LOSS OF ACCESS TO RESTRICTED MARKETS AND INROADS MADE BY SUBSIDIZED COMPETITION.

2. DEPRESSED WORLD PRICES -- THIS IS THE EFFECT NOT ONLY OF THE ARTIFICIALLY HIGH LEVELS OF PRODUCTION IN PROTECTED COUNTRIES BUT OF THE MARKET UNCERTAINTIES CONNECTED WITH THE USE OF EXPORT SUBSIDIES. THESE SUBSIDIES SEVER THE TIE BETWEEN COST OF PRODUCTION AND EXPORT PRICING PRACTICES, DISRUPTING THE NORMAL WORKINGS OF THE MARKET.

3. GREATER MARKET INSTABILITY -- THE ISOLATION OF MAJOR AGRICULTURAL PRODUCERS AND CONSUMERS FROM THE FLUX OF MARKET FORCES PLACES A MUCH GREATER BURDEN OF ADJUSTMENT ON THOSE COUNTRIES WHOSE SYSTEMS CONTINUE TO BE INFLUENCED BY SUCH CHANGES. PRICE FLUCTUATIONS IN THE WORLD MARKET ARE GREATER THAN THEY WOULD BE IF ALL COUNTRIES MAINTAINED OPEN MARKETS.

A NUMBER OF EFFORTS HAVE BEEN MADE TO QUANTIFY THE IMPACT OF EC AND JAPANESE POLICIES ON U.S. TRADE AND/OR WORLD

AGRICULTURAL TRADE. FOR EXAMPLE, I NOTE THAT A RECENT ERS STUDY ESTIMATED THE LOSS OF U.S. GRAIN TRADE RESULTING FROM EC GRAIN POLICIES AT ABOUT $2 BILLION.

WHILE THIS IS HARDLY AN INSIGNIFICANT FIGURE, I TEND TO BELIEVE THAT MOST ATTEMPTS TO QUANTIFY THE EFFECTS OF PROTECTIONISM AND/OR EXPORT SUBSIDIES, WHICH USUALLY RELY ON A STATIC ANALYSIS BASED ON CALCULATED ELASTICITIES, UNDERESTIMATE THE ADVERSE EFFECTS. IT IS HARD, IN MY VIEW, FOR QUANTITATIVE MODELS TO FULLY GAUGE THE STIMULUS TO PRODUCTION CAUSED BY YEAR-AFTER-YEAR OF ISOLATION FROM BASIC MARKET FORCES, BY CONTINUED EXPOSURE TO A MARKET THAT CAN GO UP BUT NEVER DOWN, OR TO GAUGE THE DISTORTIVE EFFECTS ON WORLD MARKETS OF $5 - 7 BILLION ANNUALLY OVER A 10 YEAR PERIOD.

TO ILLUSTRATE, LET'S LOOK AT A FEW FEATURES IN THE RECENT EVOLUTION OF EC AGRICULTURE.

-- AT THE START OF THE 1970'S, THE EC WAS A NET IMPORTER OF OVER 20 MILLION MT OF GRAIN ANNUALLY. IN 1983/84, EC NET EXPORTS REACHED 10 MILLION MT. WITH A HUGE GRAIN CROP THIS YEAR, EC NET GRAIN EXPORTS ARE EXPECTED TO REACH 17 MILLION TONS AND THE EC WILL PROBABLY BE SECOND ONLY TO THE U.S. AS A WHEAT EXPORTER.

-- SIMILARLY, IN THE LATE 1960'S OR EARLY 1970'S, THE EC WAS A NET IMPORTER OF POULTRY, SUGAR, AND BEEF. THE EC IS NOW AMONG THE WORLD'S LARGEST EXPORTERS OF ALL THREE OF THESE PRODUCTS.

THE TREND HAS BEEN SIMILAR FOR ALMOST ALL AGRICULTURAL PRODUCTS GRACED BY THE MIDAS TOUCH OF THE CAP. WOULD THIS EVOLUTION HAVE OCCURRED WITHOUT THE VARIABLE LEVY/EXPORT SUBSIDY PROGRAMS OF THE EC? CLEARLY, IT WOULD NOT. AND THE IMPACT OF THESE SHIFTS ON THE AGRICULTURAL TRADE OF THE U.S AND OTHER COUNTRIES CANNOT BE REGARDED AS ANYTHING LESS THAN ENORMOUS.

ATTEMPTS AT STATIC ANALYSIS ALSO DO NOT READILY TAKE INTO ACCOUNT PROBLEMS THAT A CONTINUATION OF CURRENT POLICIES WILL POSE FOR THE FUTURE. FOR IT WOULD APPEAR THAT WE ARE IN A DETERIORATING SITUATION. DEMAND FOR AGRICULTURAL PRODUCTS, AND THUS AGRICULTURAL TRADE, IS GROWING AT A MARKEDLY SLOWER PACE IN THIS DECADE THAN THE 1970'S. ON THE SUPPLY SIDE, THE RAPID ADVANCE OF AGRICULTURAL TECHNOLOGY SEEMS TO BE OUTSTRIPPING THE CAPACITY OF GOVERNMENT POLICY INSTRUMENTS TO ADJUST. UNLESS MAJOR CHANGES ARE MADE IN BOTH NATIONAL POLICIES AND INTERNATIONAL RULES, WE ARE LIKELY TO SEE A FURTHER PROLIFERATION OF PROTECTIONIST DEVICES AND UNFAIR TRADE PRACTICES AND A FURTHER DISTANCING OF AGRICULTURAL TRADE FROM UNDERLYING MARKET FORCES.

THIS ADMINISTRATION IS WORKING HARD TO CHANGE THAT BLEAK

OUTLOOK.
OVER THE PAST FOUR YEARS, SOME IMPORTANT GAINS HAVE BEEN MADE. A SIGNIFICANT LIBERALIZATION OF JAPANESE QUOTAS ON BEEF, CITRUS, AND 13 OTHER CATEGORIES OF AGRICULTURAL PRODUCTS WAS NEGOTIATED, WHICH IS EXPECTED TO PERMIT A $400 MILLION INCREASE IN U.S. EXPORTS OVER THE NEXT 4 YEARS.

WE HAVE THUS FAR FORESTALLED EFFORTS BY THE EUROPEAN COMMUNITY TO LIMIT ACCESS TO THEIR MARKET FOR OILSEEDS AND OILSEED PRODUCTS AND FOR NON-GRAIN FEED INGREDIENTS SUCH AS CORN GLUTEN FEED -- TRADE THAT CURRENTLY TOTALS CLOSE TO $ 4 BILLION.

PERHAPS MOST IMPORTANTLY, WE HAVE EFFECTED, I BELIEVE, A FUNDAMENTAL CHANGE IN THE ATTITUDES OF FOREIGN GOVERNMENTS TOWARDS THE EXISTING INTERNATIONAL RULES THAT APPLY TO AGRICULTURAL TRADE. THERE IS NOW A WIDESPREAD RECOGNITION THAT THESE RULES ARE DEFICIENT AND MUST BE CHANGED. THAT CHANGE IN ATTITUDE WAS MANIFESTED BY AN AGREEMENT REACHED IN GATT, JUST A FEW WEEKS AGO, TO TRY TO DEVELOP A BASIS FOR PROCEEDING TO FORMAL NEGOTIATIONS TO STRENGTHEN THE INTERNATIONAL RULES APPLYING TO AGRICULTURAL TRADE.

THAT EFFORT WILL BE MADE UNDER THE AUSPICES OF A GATT COMMITTEE ON TRADE IN AGRICULTURE OVER THE NEXT YEAR. IT WILL ENCOMPASS:

-- THE ELABORATION OF PROPOSALS WHICH WOULD BRING SUBSTANTIALLY ALL MEASURES AFFECTING TRADE IN AGRICULTURE UNDER STRONGER AND MORE EFFECTIVE GATT RULES AND DISCIPLINES. THE MEASURES TO BE EXAMINED WOULD INCLUDE QUOTAS AND OTHER QUANTITATIVE RESTRICTIONS, VARIABLE LEVIES AND SUBSIDIES.

-- IN THE CASE OF EXPORT SUBSIDIES, ONE OF THE APPROACHES TO BE EXAMINED WILL BE THE ESTABLISHMENT OF A GENERAL PROHIBITION SUBJECT TO CERTAIN "CAREFULLY DEFINED EXCEPTIONS." IN PARALLEL WITH THIS EXERCISE WILL BE AN EFFORT TO IMPROVE EXISTING RULES ON EXPORT SUBSIDIES.

WE RECOGNIZE THAT WHAT HAS BEEN DONE THUS FAR, HOWEVER, IS ONLY A START IN THE RIGHT DIRECTION.

WE ARE DETERMINED TO IMPROVE OF MARKET ACCESS FOR U.S. PRODUCTS AND TO ELIMINATE UNFAIR TRADING PRACTICES WHICH FURTHER RESTRICT OUR ABILITY TO EXPORT U.S. FARM PRODUCTS . WE WILL CONTINUE TO RESIST EC EFFORTS TO REDUCE OUR ACCESS FOR OILSEEDS AND ANIMAL FEEDS, MAKING CLEAR THAT SUCH ACTIONS WOULD RESULT IN QUICK RETALIATION AGAINST THEIR EXPORTS TO THE UNITED STATES.

WE WILL PRESS HARD FOR A SUCCESSFUL OUTCOME OF THE WORK OF THE GATT'S COMMITTEE ON TRADE IN AGRICULTURE. AND, ON THAT BASIS, WE WILL SEEK TO MOVE RAPIDLY INTO THE NEGOTI-

ATION OF NEW INTERNATIONAL RULES FOR AGRICULTURE.
OUR OBJECTIVE REMAINS THE LIBERALIZATION OF THE AGRICULTURAL TRADE SECTOR -- LESS GOVERNMENT INTERFERENCE, GREATER ACCESS TO MARKETS, A SHARPLY REDUCED ROLE FOR EXPORT SUBSIDIES (AND EVENTUALLY THEIR ELIMINATION.) WITH THAT GOAL IN MIND, WE ARE WILLING TO PUT OUR OWN POLICIES ON THE TABLE. HOWEVER, WE WILL NEED TO SEE CONCRETE PROGRESS. MEASURES SUCH AS THE 1983 WHEAT FLOUR SALE TO EGYPT ARE AVAILABLE IF WE PERCEIVE THAT OUR BILATERAL AND MULTILATERAL INITIATIVES ARE DEVELOPING INTO AN ENDLESS AND FUTILE DEBATING EXERCISE. AS AMBASSADOR BROCK HAS SIGNALED, THE UNITED STATES "WILL BE A GOOD DEAL LESS PATIENT" AND "A GOOD DEAL MORE AGGRESSIVE" IN DEALING WITH UNFAIR TRADE PRACTICES -- IN AGRICULTURE AS WELL AS OTHER TRADE AREAS.

WORLD AGRICULTURAL TRADE AND U.S. FARM EXPORTS IN A CHANGING INTERNATIONAL MACROECONOMIC AND FINANCIAL ENVIRONMENT

OUTLOOK '85

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Introduction

The international macroeconomic and financial environment has shifted dramatically over the last 4 years away from the expansionary setting of the 1970's toward contraction in the first half of the 1980's. The shift has been sharp enough and its impacts far-reaching enough to generate the sharpest slowdown in world agricultural trade and losses in U.S. farm exports since the end of World War II.

Unusually strong growth in income and employment in the developed and developing countries over the 1970's generated unprecedented growth in demand for a wide variety of goods and services. Growth in demand for farm products in particular accelerated as rising per capita incomes allowed consumers in the middle and upper income countries to upgrade and diversify their diets. Much of this growth in demand was met initially through increases in agricultural production locally. But more and more of the countries experiencing the strongest gains in economic activity and the faster growth in food demand were forced to turn to the world market as a regular source of supply as the decade progressed. The number of countries depending regularly on imports for more than 5 percent of their food supplies grew from less than 25 at the start of the 1970's to over 40 at the start of the 1980's.

This growing dependence on agricultural imports, and the opportunities it provided for growth in U.S. farm exports, depended in turn on a number of equally unusual international financial developments. The world money supply more than doubled over the 1970's as the eurodollar market expanded, new reserve assest (SDR's) were created, and a second petro-dollar market emerged to provide the financial underpinning for growth in world trade. Many of the largest food importing countries were also able to increase their non-agricultural exports in the expansionary trade environment of the 1970's and double, in some cases triple, foreign exchange earnings.

This growth in international buying power, supplemented with low-cost euro- and petrodollar loans and supplier credits, allowed many developing countries to expand food imports while servicing growing debts and increasing purchases of other goods and services. With the value of the U.S. dollar declining, the cost of dollar-denominated imports and the euro- and petrodollars borrowed to finance them actually fell over most of the decade in local currency terms. Many of these same financial factors, particularly the declining value of the dollar, also encouraged the developed countries and several of the centrally planned countries to expand their imports of agricultural and non-agricultural products as well, in some cases as fast or faster than in the developing countries.

However, slowed growth in economic activity and employment at the end of the 1970's and in the first half of the 1980's reversed this expansionary demand and trade situation. Growth in demand for farm products has fallen off to less than half the pace of the 1970's and many of the heretofore fastest growing importing countries have shifted to rely more heavily on local producers as a source of supply.

This move toward less dependence on imports strengthened as the 1980's progressed and the international financial environment changed dramatically. Growth in the developing countries' export earnings fell off precipitously with the general contraction in world trade and drop in primary product prices experienced so far in the 1980's. The tightened supply and rising cost of credit also worked to discourage imports. With the value of the dollar up sharply, the cost of dollar-denominated transactions--including repayment of debts incurred in the 1970's--also rose sharply. These developments forced many developing countries to ration scarce foreign exchange and encouraged many developed countries to slow or reverse growth in imports priced in increasingly expensive U.S. dollars.

Agriculture has not fared well in the demand and trade adjustment process that followed. Growth in world trade in farm products slowed to less than one-fifth the pace of the 1970's. U.S. farm exports fared even more poorly; exports fell in 1982 and 1983 to less than 90 percent of the volume record set in 1980 and 75 percent of the real value record set in 1981.

With prospects for macroeconomic recovery and improvements in the international financial situation later in the decade favorable, the world trade slowdown and U.S. export reversals experienced since 1980 are not likely to persist. However, given the macroeconomic and financial linkages involved, world economic recovery could lag 1 to 2 years behind the recovery underway in several developed countries and a rebound in trade could lag even further. Moreover, without a return to the 1970's unusually favorable combination of macroeconomic and financial developments, real growth in world trade after recovery could well lag at one-half to three-quarters of the pace of the 1970's.

Prospects for growth in U.S. agricultural exports depend in turn on growth in world trade and improvements in the U.S.'s weakened competitive position in the market. As the experience of the early 1980's points out, the U.S.'s competitive position has grown to depend on more than the supply and quality of the farm products it has available to export. In the bearish demand and trade environment of the 1980's, U.S. farm exports depend more than ever on aggressive marketing and competitive pricing. Macroeconomic and farm policies traditionally seen as only tangentially related to agricultural exports have also become critical. U.S. macroeconomic policy, for example, has become a key determinant of the cost of the dollars necessary to buy U.S. farm products while domestic farm policy has become a major determinant of farmers' ability to and interest

in exporting in a competitive market setting. Without improvements in the U.S.'s competitive position, growth in U.S. farm exports over the remainder of the decade could lag well behind growth in world trade and competitors sales and not match the 1981 record until early in the 1990's. With a concerted effort to price competitively and market more aggressively, however, U.S. farm exports could equal or possible surpass the 1981 record by the late 1980's.

Macroeconomic Growth and Employment

Macroeconomic activity and employment in the developed and developing countries expanded at an unprecedented pace over the late 1960's and 1970's. Production of goods and services grew more than 50 percent from 1967 to 1976 and increased another 20 percent from 1976 to 1980 (Table 1 and Appendix Table A). The growth in employment generated by this increased economic activity matched, in many cases outpaced, growth in their labor forces. As a result, several developed countries approached full employment while unemployment in the developing countries failed to worsen as severely as many demographers and macroeconomists expected.

The 1970's unprecedented economic growth generated an equally unprecedented surge in consumer demand for a wide variety of goods and services. Growth in demand for farm products accelerated sharply as increased affluence allowed low income groups in the developed countries and middle income groups in the developing countries to upgrade and diversify their diets. Demand growth increased from less than 2.5 percent in the 1950's and 3 percent in the 1960's to 3.5 percent in the 1970's and almost 4 percent from 1976 through 1979 (Table 2).

The 1970's growth in macroeconomic activity and employment was both responsible for and dependent on equally unprecedented growth in world trade. While much of the initial growth in demand for goods and services experienced in the 1970's was met from increases in local output, more and more countries turned to the world market for a widening variety of products. An unusually large share of the added goods and services these countries produced domestically also moved into the export market.

This increased trade worked to sustain, in many cases accelerate, growth in economic activity. Increased imports freed growth in local consumption of products in limited supply from lagging growth in local production. Increased exports freed growth in production of products in excess supply from lagging growth in local demand and provided the wherewithall to pay for imports.

Growth in world agricultural trade accelerated from the 2 to 3 percent pace of the 1950's and 1960's to over 4 percent in the 1970's (table 3). With its large supplies of readily available, competitively priced farm products, the United States filled more than two-thirds of this increase in import demand. U.S. exports grew three times as fast as world exports.

However, growth in income and employment slowed dramatically at the start of the 1980's and generated an equally dramatic slowdown in growth in demand for farm products. The contrast between the 1976-1979 and 1980-1983 periods is particularly marked. Economic growth in the developed countries slowed from 3.7 percent over the last half of the 1970's to 1 percent in the early 1980's (table 1). The developing countries experienced an even more pronounced slow down, with growth in economic activity dropping from more than 5 percent to less than 1 percent. Over half of the countries in question reported more than 4 consecutive quarters of negative growth since mid-1980.

Table 1--Growth in Real Income 1/

	1976-79	1980-83
	--Percent change--	
Developed countries	3.7	1.0
	(2.9)	(0.2)
Developing countries	5.3	0.8
	(2.7)	(-1.7)
World	4.1	0.9
	(2.0)	(-1.3)

1/ Numbers in parenthesis are per capita growth rates.

Table 2--Growth in Demand for Farm Products

	1976-79	1980-83
	---Percent Change---	
Developed Countries	1.8	.9
	(0.9)	(0.1)
Developing Countries	4.5	1.9
	(1.9)	(-0.5)
World	3.8	1.7
	(1.6)	(-0.3)

1/ Numbers in parenthesis are per capita rates.

The increases in employment generated by the strong economic growth of the late 1970's also slowed with the start of the 1980's. By 1982, over half of the developed and developing countries reported losses in employment of 2 to 5 percent or more. Continued growth in their labor forces combined with these losses in jobs to make high and rising unemployment a serious problem in many developed countries and most developing countries. By 1983, real per capita incomes for the developed and developing countries as a group had fallen 5 to 10 percent below the record set in 1980. Many of the most seriously affected countries experienced losses of 25 percent or more.

Table 3--Growth in World and U.S. Agricultural Exports

	World Agricultural Exports	U.S. Agricultural Exports
	Index 1974-76 = 100	
1960	63	36
1965	73	55
1970	85	60
1975	98	95
1976	106	108
1977	108	105
1978	116	129
1979	124	139
1980	129	154
1981	133	153
1982	134	143
1983	134	138
1984	136	136
	% Change	
1980/1970	+52	+157
1983/1980	+ 5	-12

The severity of the economic downturn appears to be due to the combination of cyclical factors and unusual shocks to the system. Many analysts point to increasingly pronounced, more closely synchronized business cycles in the developed countries as an important factor. With international capital and trade flows growing in importance, the transmission of slowdowns and pick-ups in the developed countries to the developing countries also appears to have accelerated. This accelerated transmission works to further strengthen cyclical upturns and downturns.

Macroeconomic policy and oil price shocks to the world economy contributed as much or more to the slowdown as business cycles. Many of the developed countries moved sharply away from the expansionary monetary and fiscal policies in place over most of the 1970's at the end of the decade. The tight money policies put in their place from 1979 through 1982 were designed to deal with worsening long term inflation problems, even at the cost of short term growth in economic activity.

This underlying concern with inflation helped condition the developed countries' response to OPEC's second round of oil price increase. The developed countries responded to the first 1973-74 oil price increase by expanding their money supplies fast enough to accommodate higher energy prices with a minimum of disruption to their domestic economies. The inflation was touched off in part by these adjustments to higher oil prices, but due as well to several years of expansionary monetary and fiscal policy, had grown to be politically unacceptable by the end of the 1970's. Hence, the developed countries responded to the second oil shock with a concerted slowdown in monetary growth that raised real interest rates and sharply curtailed economic growth around the world.

Whatever its proximate and longer term causes, the economic slowdown experienced so far in the 1980's has weakened growth in demand for farm products significantly. As Table 2 suggests, growth in demand in the early 1980's slowed to less than half the pace of the late 1970's as population growth, rather than increasing affluence, became the main source of expansion in demand.

This slowed growth in demand allowed many of the largest importing countries to slow, in some cases reverse, growing dependence on imports. Growth in world agricultural trade slowed even more sharply than growth in income or demand for farm products. After expanding more than 40 percent from 1967 through 1976 and an added 25 percent from 1976 through 1979, world trade grew less than 5 percent from 1980 through 1983 (Table 3).

The International Financial Environment

Changes in the international financial environment in the early 1970's and again in the early 1980's amplified the impact of changes in macroeconomic growth on demand for and trade in farm products.

The international financial system grew rapidly at the start of the 1970's and continued to expand over the remainder of the decade. Unusually strong growth in international liquidity and the emergence of an integrated world money market provided the financial underpinning for the decade's expansion in agricultural trade. Three factors were particularly important--euro- and petrodollar related growth in the world money supply, growth in export earnings in a number of low income developed and developing countries, and a weakening dollar.

The strong growth in export earnings the developing countries enjoyed in the expansionary trade environment of the 1970's allowed them to expand food, feed, and fiber purchases abroad at an unprecedented pace. Growth in their foreign exchange earnings was particularly marked over the last half of the 1970's with annual gains averaging more than 20 percent (Table 4 and Appendix Table B). This growth in international buying power allowed the countries in question to translate unmet local demand for farm products and a widening range of other items into effective import demand. Similar, albeit less dramatic, growth in export earnings was reported in many of the developed countries, particularly the lower income developed countries, and also encouraged growth in imports.

Table 4--Growth in Developing Country Export Earnings

	1977-80	1981-84
	--- Percent ---	
Developing countries	22.7	2.2
Africa	15.6	-2.5
Asia	24.0	7.5
Latin America	22.9	3.7
Middle East	22.9	-0.3

Several other international financial factors were also at play to expand growth in trade. Growth in the international money supply accelerated in the early 1970's and continued to grow over the decade as the eurodollar market expanded and a second petrodollar market emerged. The credit available from public and private sources in exporting countries interested in expanding sales abroad also increased significantly. Overall, growth in the supply of credit available from the expanding world money market and exporter interests was fast enough to keep nominal interest rates low despite rapidly expanding borrowing. Given the pace of world inflation over most of the 1970's, the real interest rates faced by most of the middle income countries were zero or negative (table 5).

The declining value of the dollar over the 1970's also worked to expand trade (table 6). A 30 percent drop in the value of the dollar over the decade lowered the local currency cost of dollar-denominated imports and the cost of borrowing to finance imports. In this environment, many countries borrowed heavily to supplement their rising export earnings in order to finance expanded imports. The middle income countries as a group committed roughly one-fifth of their increased export earnings and borrowings shown in Table 7 to imports of farm products.

This expansionary international financial environment shifted dramatically toward contraction at the start of the 1980's and reversed growth in trade. Tightened money supplies in the developed countries slowed macroeconomic growth and employment and, after several quarters, in the

Table 5--International interest rates

	U.S. money market rate	Effective developing country interest rate 1/
	---percent---	
1972	4.4	-6.5
1973	8.7	-18.5
1974	10.5	-17.9
1975	5.8	5.3
1976	5.1	+8.1
1977	5.5	-3.6
1978	7.9	9.7
1979	11.2	-8.7
1980	13.4	-4.4
1981	16.4	32.6
1982	12.3	29.9
1983	9.1	21.6
1984	8.5	18.0
1970/1979	7.1	-6.4
1980/1984	12.0	19.5

1/ U.S. money market rate adjusted to reflect inflation in world export unit values and changes in the value of the dollar.

Table 6. The Changing Value of the U.S. Dollar

	SDR weighted	Agricultural trade weighted: nominal	Agricultural trade weighted: real
	percent change		
1970-76	-13.4	-13.1	-23.6
1977-79	-10.6	+3.2	-8.9
1980-83	+21.8	+212.5	+25.5

1/ Adjusted to reflect differences in domestic inflation in the U.S. and its major agricultural markets.

Table 7--Developing Country External Debt

	1977-80	1981-84
	---Billion dollars---	
Developing countries	438	750
Africa	41	64
Asia	90	160
Latin America	148	287
Middle East	33	53

developing countries as well. Growth in world trade slowed sharply with the 1980-83 recession and increasingly protectionist trade policies focused demand cutbacks on imported products. Table 4's data show how dramatically the developing countries' export earnings fell off. Export volume and prices fell off sharply and the terms of trade moved against the middle income countries responsible for a disproportionately large share of growth in world trade. In real terms, the developing countries' 1983 export earnings were 25 percent below their 1980 peak.

The developing countries' international buying power was further reduced by changes in the international credit situation and the value of the dollar. Worldwide demand for credit increased sharply early in the 1980's with increased U.S. borrowing, foreign investment in the United States, and slowed growth in export earnings in the middle income countries that created increased demand for debt to maintain overall liquidity. Growth in the supply of credit available worldwide also dropped as petrodollar recycling slowed with reduced OPEC oil export earnings in 1982 and 1983. Dollar-denominated interest rates rose sharply to re- flect the tightened balance between money supply and demand (table 5).

Equally important, the appreciation of the dollar worked to raise the cost of dollar-denominated transactions sharply in local currency terms. Higher interest rates and the changing value of the dollar raised the real cost of credit to the developing countries from -6 percent over the 1970's to almost 20 percent in the early 1980's. The stronger dollar also changed the debt service situation for many developing countries who contracted loans at what they thought to be low real interest rates for repayment with appreciating local currency. These loans now had to be repaid with rapidly depreciating currency even as payments in many countries grew to exceed their total export earnings.

Agricultural imports did not fare well in the financial adjustment process that followed. Scarce foreign exchange was rationed. In the

implicit ranking of foreign exchange expenditures that followed, debt service payments were generally afforded the highest priority. As Table 8 suggests, debt service payments almost doubled from 1976 to 1979 and increased 60 percent more from 1980 to 1984 despite a substantial slowdown in borrowing in 1983 and 1984 and extensive payment rescheduling. If provision is made for the changing value of the dollar, the local currency cost of debt repayments grew slower than implied in the dollar amounts shown in Table 8 from 1976 to 1979 but appreciably faster than shown for 1980 to 1984.

Imports of development goods and services were reduced but to a lesser extent than non-durable goods such as agricultural products. On balance, while imports of all goods and services slowed, growth in farm imports have stagnated in nominal terms and fallen in real value terms (table 9).

Table 8--Developing Country
Debt Service Payments

	Billion dollars
1977	39.8
1978	57.7
1979	75.4
1980	89.6
1981	109.3
1982	124.1
1983	111.7
1984	121.3
1985	142.9

Table 9. Agricultural and Non-Agricultural Imports

Year	Developed countries			Developing countries		
	Agricultural imports	Total imports	Agriculture as % of total	Agricultural imports	Total imports	Agriculture as % of total
	--Billion $--		--%--	--Billion $--		--%--
1977:	110	715	15.3	38	282	13.5
1978:	124	825	15.1	44	333	13.2
1979:	146	1,067	13.7	53	408	13.0
1980:	158	1,276	12.4	68	523	13.0
1981:	148	1222	12.1	74	572	12.9
1982:	141	1,150	12.2	66	528	12.5
1983:	138*	1,131*	12.1*	60*	495*	12.1*

* = Preliminary

U.S. Agricultural Exports

The U.S.'s large supplies of competitively priced farm products put it in a strong competitive position to capture a disproportionately large share of growth in world agricultural trade over most of the 1970's. As table 3 suggests, U.S. farm exports grew 3 times faster than world agricultural exports from 1970 to 1979. Growth from 1976 to 1979 was particularly strong and broke the record gains of the first half of the decade. The data in table 3 also points out how poorly U.S. agricultural exports have fared in the bearish market environment of the early 1980's. While world agricultural trade has expanded 5 percent since 1980, U.S. agricultural exports have fallen off more than 10 percent.

U.S. export performance during both the 1970-79 and 1980-83 periods point to the importance of staying competitive whatever the market environment as well as the growing importance of factors traditionally seen as only tangentially related to farm exports. U.S. macroeconomic policy, for example, has traditionally been seen as only coincidentally related to agricultural exports. However, the changing value of the dollar worked first to enhance and then to weaken the U.S. comparative advantage in producing bulk products for export.

A weakening dollar in the 1970's worked to raise returns and lower costs to U.S. producers vis-a-vis producers in competing countries with appreciating currencies. In the case of wheat, for example, U.S. dollar-denominated export prices rose faster than, and U.S. dollar denominated costs of production rose slower than prices and costs in Canada, Australia, and the EC. The impact on net returns and producer incentive to expand output for export was even more pronounced.

An appreciating dollar in the 1980's, however, worked in reverse to raise costs and lower prices in the United States vis-a-vis producers in competing countries with depreciating currencies. The widening margin between returns in the United States and the other suppliers encouraged them to expand production for export and use price discounts and other aggressive marketing techniques to undercut U.S. sales. In short, changes in the value of the dollar converted growth in world import demand in the 1970's into a U.S. export explosion and a slowdown in growth in world import demand in the 1980's into heavy U.S. export losses.

The farm policies in place also work to maximize the U.S. role as the world's residual supplier absorbing a disproportionate share of shocks to the market. High price supports and nonrecourse loans provide U.S. producers caught in a bearish environment with the choice of competing for world markets at prices that fall close to or short of costs or channeling their products into Government stocks at prices well above open market levels. In short, while the rising dollar has made it increasingly difficult for U.S. producers to compete with other suppliers for world markets, the support programs currently in place undermine their interest or incentive to compete in a bearish environment by guaranteeing a more attractive Government outlet for their products at home.

Prospects for the Mid- and Late-1980's

With recovery underway in many of the developed countries, growth in economic activity and employment in the second half of the 1980's should accelerate. But while growth for the remainder of the decade could match the overall pace of the 1970's, it is unlikely to match the pace of the last half of the 1970's. Macroeconomic recovery should work, after provision is made for 1 to 2 years of leads and lags, to expand growth in demand for farm products. The pace and direction of changes in the international financial situation are far more difficult to forecast. Clearly, a strengthened international financial system is a sine qua non for recovery in world trade, but many of the problems troubling the system have yet to be resolved. The debt crisis in developing countries is critical but not the only problem facing the system. The system's limited ability to deal with large scale capital movements and wide fluctuations in exchange rates is also currently working to slow economic recovery and growth in trade.

With the resolution of the debt issue and stabilization of the world capital market, strong macroeconomic growth in the late 1980's could generate a return to 3 to 4 percent annual increases in world agricultural trade. A return to the sustained 5 to 7 percent growth of the late 1970's, however, appears unlikely unless severe crop production shortfalls combine with stronger than expected economic recovery and improvements in the financial situation.

How the U.S. fares in this environment will ultimately depend on its competitive position in the market. The experience of the last 5 years suggests that the U.S.'s competitive position has grown to depend on more than the supply and quality of farm products it has available to export. In the slow-growth environment likely over most of the 1980's, U.S. farm exports will depend more than ever on aggressive marketing, competitive pricing, and trade-oriented farm policies as well as supportive macroeconomic policies. A competitive U.S. agriculture could return to a commanding position in the export market. However, without change in many of these policy-sensitive areas, the United States could well continue to serve as the residual supplier in a bearish market into the 1990's.

Appendix Table A--Growth in Macroeconomic Activity

	Average 1967-76	Average 1976-79	Average 1980-83	1977	1978	1979	1980	1981	1982	1983	1984	1985
	--- Percent change ---											
United States	2.8	4.7	0.9	5.5	5.0	2.8	-0.3	2.5	-2.1	3.7	7.3	4.0
Industrialized Countries:	4.0	3.7	1.1	3.4	3.8	3.7	1.8	1.3	-1.0	2.2	4.1	3.2
Japan	7.4	5.2	3.7	5.3	5.1	5.2	4.8	4.0	3.3	3.0	5.0	4.1
Western Europe	3.8	2.8	.8	2.4	3.1	3.4	1.5	-0.2	0.5	1.3	2.3	2.4
Developing Countries:	5.7	5.3	0.9	6.0	4.7	4.3	2.3	0.7	-0.1	0.9	3.7	4.4
oil importing	5.6	5.8	2.9	5.8	6.4	5.0	5.0	3.1	1.7	1.8	3.7	4.3
oil exporting	7.0	4.7	-2.8	6.3	2.3	3.7	-2.1	-4.1	-4.2	-0.8	3.8	4.6
Africa	4.8	2.4	1.7	2.3	2.5	2.0	3.0	1.7	1.3	0.8	3.2	3.6
Asia	5.0	7.3	5.5	7.3	9.8	4.8	5.5	5.0	4.5	7.0	6.6	5.8
Latin America	6.6	5.4	0.8	5.1	4.3	6.5	6.0	1.1	-1.2	-2.8	1.1	3.4
Middle East	5.6	7.5	4.7	9.4	6.6	5.6	6.8	5.4	2.9	3.8	4.0	4.6

Appendix Table B--Unemployment Rates in Selected Developed Countries

	Average 1967-76	Average 1976-79	Average 1980-83	1977	1978	1979	1980	1981	1982	1983	1984	1985
	--- Percent ---											
United States	5.4	6.4	8.5	7.0	6.1	5.9	7.2	7.6	9.7	9.6	7.5	6.9
Industrialized Countries:	2.6	4.3	6.2	4.3	4.4	4.4	4.7	5.8	6.7	7.4	7.6	7.6
Japan	1.4	2.1	2.3	2.0	2.2	2.1	2.0	2.2	2.4	2.7	2.6	2.3
Western Europe	3.0	5.4	8.1	5.4	5.5	5.6	6.0	7.7	8.9	9.8	10.2	10.4

Source: International Monetary Fund

Appendix Table C--Developing Country Export Earnings

	Average 1967-76	Average 1977-80	Average 1981-84	1977	1978	1979	1980	1981	1982	1983	1984	1985
	--- Percent change from previous year ---											
Industrialize countries:	7.9	5.8	4.2	5.3	6.2	7.6	3.9	3.3	2.3	2.6	8.6	4.9
United States	6.7	8.1	-3.7	1.2	10.0	14.2	7.0	-3.2	-11.9	-6.2	6.5	3.6
Western Europe	7.9	5.1	3.7	5.8	6.0	7.3	1.3	3.9	0.3	3.8	6.6	4.9
Developing Countries:	19.5	22.7	-2.2	14.9	7.2	36.3	32.5	-0.9	-12.4	-5.4	10.0	8.9
Africa	12.3	15.6	-2.5	15.8	4.2	24.8	17.6	-9.3	-7.3	-2.4	9.0	8.5
Asia	17.7	24.0	7.4	19.8	21.0	30.7	24.5	9.5	-1.6	6.8	15.2	11.5
Latin America	13.5	22.9	3.7	24.2	10.2	28.6	28.7	7.5	-7.2	2.2	12.1	11.1
Middle East	15.7	22.9	-0.3	22.9	9.0	25.1	34.7	4.9	-7.0	-9.5	10.4	10.2

Appendix Table D--U.S. Agricultural Exports

	1976	1977	1978	1979	1980	1981	1982	1983
	- - - Billion $ - - -							
Industrialize countries:	12,592	13,283	14,701	16,211	18,867	19,646	18,205	17,390
Japan	3,563	3,857	4,435	5,255	6,111	6,562	5,555	6,251
Western Europe	7,878	8,358	9,073	9,872	11,685	11,836	11,463	9,999
Developing Countries:	6,823	7,372	9,708	10,798	14,562	15,964	12,856	14,424
Africa	1,116	1,306	1,534	1,521	2,128	2,663	2,110	2,210
Asia	3,136	3,049	3,843	4,416	5,182	5,532	5,187	5,729
Latin America	1,938	2,217	3,158	3,687	6,150	6,367	4,438	5,211
Middle East	612	774	1,142	1,134	1,060	1,359	1,075	1,228
Total	22,978	23,636	29,382	34,749	41,233	43,339	36,623	36,098

CREDIT PROGRAMS: BENEFITS AND RISKS

OUTLOOK '85

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Annual Agricultural Outlook Conference
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Thank you for the opportunity to meet with you today to discuss the credit programs which USDA is utilizing as an integral part of its broad-based export development program.

In recent years, the United States has made increasing use of export credits to cope with the lag in farm exports caused by the global recession, the strong dollar, increased market competition, and the foreign exchange and debt problems which developing countries face.

The rapid expansion of U.S. agricultural exports over the past 20 years has increased the stake of U.S. farmers in continued foreign economic growth and trade, and the development of foreign markets.

About one-third of our harvested crops now are exported and between one-fifth and one-fourth of farm receipts are generated by exports.

In fact, foreign demand for U.S. farm products over the past decade expanded faster than domestic demand, so a higher proportion of our crop production now goes to foreign markets. Obviously, these markets are vital to the economic well-being of U.S. agriculture, and thus to the entire U.S. economy. That is precisely why we have moved aggressively to utilize credit programs to the fullest extent possible to help counteract economic problems faced by many of our potential customers.

The workhorse of our financing tools has been the Export Credit Guarantee Program, aided by the flexibility of a blended credit program, and the reliability of the P.L. 480 program.

The GSM-102 credit guarantee program provides all-risk credit guarantees to U.S. banks financing agricultural sales on credit terms of up to three years. Credit terms not normally available from regular commercial sources are offered for the export of U.S. farm commodities. Our overall ceiling was $4.5 billion in credit guarantees for the GSM-102 program in the 1984 fiscal year. We are starting out the 1985 fiscal year with an allocation of $5 billion.

A smaller program, called blended credit, is being used this year specifically to counter EC export subsidies. This program combines direct interest-free Commodity Credit Corporation funds under the GSM-5 program with GSM-102 guarantees to provide financing at more competitve interest rates.

Through the long-standing P.L. 480 program, the U.S. government finances the sale of agricultural products to developing countries on concessional terms at low interest rates with long repayment terms. Under this law we can also provide food donations to meet famine and other urgent relief needs.

In addition to helping sell a total of about 35 million tons of U.S. farm products overseas in fiscal 1983, P.L. 480 and the CCC programs have benefited purchasing nations as well.

Credit has helped developing countries over some rough spots. It permits them to meet food needs while conserving badly needed foreign exchange. For example, a $1.3 billion GSM-102 program was used to maintain most of Mexico's market during that country's severe economic and financial crisis beginning in late 1982.

This was good for U.S. producers who sold over 10 million tons of agricultural goods to Mexico in 1983--out of total Mexican import purchases of 11 million tons--and good for Mexico as well. It offered Mexico some flexibility in dealing with balance of payments problems while still meeting basic food import needs. Thus far, Mexico has met every interest and principal payment on schedule.

Korea is another case in point. U.S. financing programs, both P.L. 480 and commercial, have made a highly significant contribution to the rapid growth of U.S. agricultural exports to Korea.

For example, U.S. export financing--initially under concessional terms and more recently with GSM-102--has encouraged development of a large commercial wheat market and has maintained the U.S. share at close to 100 percent. With competition for these sales heating up, credit may be the key to holding a large market share. Credit arrangements have also been important for sales of cotton and other commodities to Korea.

Without credit, some countries would have had to go without needed foodstuffs. In other cases, credit enabled us to make sales that otherwise would have gone to competitors. Agricultural credit also frees up foreign exchange for badly needed supplies for the industrial sector of many developing nations, allowing the country to maintain its economic growth. That growth, in turn helps long term growth of agricultural markets.

In addition to expanding and maintaining markets, these programs contribute to the overall economy of the United States in other ways. Benefits include increased tax revenues and decreased costs of domestic farm programs, including crop loans and storage.

However, such benefits do not come without certain risks.

The greatest risk, of course, is that of failure to pay. Fortunately, this problem has not occurred often. And we have reason to believe that it will not. Even the repayment performance of P.L. 480 recipients, which are often very weak financially, generally has been quite respectable.

In the credit guarantee program, the CCC is obligated to make payment to U.S. banks when there is a failure to pay for any reason. In most cases, the debt is rescheduled. In terms of government outlays, if we were to assume that 20 percent of the debt under the credit guarantee program had to be rescheduled, and if the terms of rescheduling continue as they are now, the net cost would be neglible. It does, however, have a negative short term impact upon cash flow, and therefore complicates the budget deficit problem.

Overall, there are strong indicators that the risks are well worth taking when the full range of expected benefits is considered. For the GSM-102 program, for example, a recent--and conservative--benefit-cost analysis supported the credit guarantee program.

Factors considered on the benefits side included the increased federal tax revenues, farm program storage cost savings, and CCC credit guarantee fees.

On the cost side, the analysis took into account the risk of rescheduling, principal write-offs in high risk categories, the costs of rescheduling and other key factors.

All things considered, the credit program comes out looking like a sound investment with an effective cost-benefit ratio.

Hopefully, many of the nations which now benefit from our credit guarantee program will eventually become fully commercial cash customers, just as many countries have already made the transition from the P.L. 480 concessional sales program to the GSM-102 program. Many countries--Equador, Egypt, Morocco, Hondoras, Indonesia, and Pakistan to name a few--are currently in both programs.

In working for expanded farm markets, we will continue to put these financing programs to work for the interest of U.S. agriculture. Our export credit programs work well to insure that payment for international sales is just as reliable as for domestic sales; to permit U.S. exporters to meet credit terms offered by competitors from other countries; to substitute commercial dollar sales for concessional sales; and--the bottom line--to boost U.S. export sales.

Credit programs are not the only answer to expanding exports. But combined with other significant efforts in market development, market access, and market information, financing is an important instrument to support export trade and to encourage adjustment to international trade imbalances.

Export credits have served U.S. agriculture well in winning and holding markets.

This is clear from the export numbers in recent years. In fiscal 1982, export credits helped move 6.5 percent of our total farm exports, while in 1983, they accounted for 17 percent. In that one year alone, this "market share" for export credits more than doubled.

There is no question that credit eased the slump in exports. While our overall exports slipped 11 percent in 1983, those to developing countries gained 2 percent going to $14.3 billion.

We must continue to assist developing countries to the extent possible because that clearly is where the largest market growth potential lies. It is to our advantage to help these countries expand their economies and improve their food supplies and diets. We need to work to support growth in these countries and to establish open two-way trading relationships with them.

Balancing the benefits and risks, then, we have clearly come down on the side of continued emphasis on credit programs, as the record shows.

We have allocated more funds to credit guarantees under GSM-102 in the past two years than at any time in the history of market development--over $9 billion. About 23 million tons of farm commodities moved under GSM-102 credit guarantees in fiscal 1983.

Blended credit financing in FY 1983 of just over $1 billion helped sell about 6 million tons of farm products to 16 countries.

And more than 6 million tons of U.S. agricultural commodities moved under P.L. 480 programs in both FY 1983 and 1984.

These financing programs have worked for U.S. agriculture in the past, and we intend to see that they do so in the future.

The 1985 FARM BILL: AN OVERVIEW OF TRADE OBJECTIVES

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Introduction

The United States has a comparative advantage in agricultural production due to an abundance of fertile farmland, favorable climate, advanced technology and state-of-the-art infrastructure. This advantage has resulted in growing levels of agricultural exports which, along with sizable amounts of international food aid, provide a source of economic growth, foreign exchange, serve humanitarian needs, and promote a safer world in which to live.

In 1985, we again face the task of drafting new farm legislation to assist the agricultural sector in keeping agricultural demand in line with growing levels of productivity. To accomplish this, one requirement is that this legislation be designed to insure an expansion of overseas sales. In essence, the legislation must move toward a greater market orientation and allow prices to send signals to domestic producers and consumers concerning the production and consumption of food and fiber; and send signals to our competitors that we will no longer make unilateral adjustments in supply or provide a price umbrella for others to expand production and increase this market share at our expense.

Second, the legislation must provide an approach to exports that will reinforce our reputation as a reliable supplier by guaranteeing an open and fair trading system in which farmers will not be singled out and used as a instrument of foreign policy; and, encourage other nations to adopt an agricultural trading system in which commodities, including trade in high value products, can be conducted in an international atmosphere of free and fair trade.

To achieve these goals, the 1985 Farm Bill must chart a new course for U.S. agricultural policy, a path that is market-oriented yet provides a transition period for the farm sector. Basically such a policy would ebb and flow with the market, allowing adjustments in the farm sector to be made in response to market conditions. Such a policy would also challenge our competitors rather than encourage their expansion of production and trade.

International Factors Affecting U.S. Agriculture

Many complex and highly interrelated factors influence the direction and magnitude of world trade in farm products. Unlike the period of the 1970's in which the rate of export growth was due in part to growth in the world economy, and a relatively low valued U.S. dollar, the 1980's have seen tight monetary policies, worldwide recession and a high valued dollar. These factors resulted in the United States experiencing a sharp drop in the value of agricultural exports to world markets after 1981. (Table 1).

A similar drop in export volume affected all major bulk commodities. (Table 2). The peak export tonnage for wheat and soybeans came in 1981/82, for rice a year earlier, and for cotton and corn even earlier in 1979/80.

Part of the explanation for the decline in U.S. farm exports is world economic trends but part of the explanation lies in the structure of U.S. farm programs, especially the relationship between support prices and market prices. With the exception of the early and late 1970's, market prices for wheat, rice and other major commodities have closely paralleled loan rates. In periods when market prices were well above loan rates, U.S. market percentage generally rose. In years when the loan rate was the major price determining factor, U.S. market percentages generally declined.

In the 1970s, with farm programs then in place, the United States was able to capitalize on the strong and expanding world market due to the large stocks, competitive prices and idle land that could be quickly brought into production to meet international market demands. But in the 1980s, this same set of policy instruments - the loan rate, the stocking program and the acreage reduction program - kept U.S. export prices higher than market clearing levels, and made the government the residual buyer, thus building large stocks and idling vast acres of cropland. At the same time competitors and customers alike were increasing acreage and production in response to the incentives of a world market price that was being supported by U.S. farm programs. In essence, U.S. farm programs of the past four years operated to force the United States to be the adjustor for the world market.

Wheat is a particular example. Over the past decade, production in several competing countries expanded by sizeable amounts (Table 3) and exports have also increased (Table 4). These trends became increasingly true after 1981 when higher support rates made the U.S. less competitive.

Besides U.S. farm programs, other factors such as LDC indebtedness and strengthening of the U.S. dollar have also been important in weakening U.S. farm trade volume. The impact of the strengthening dollar was particularly important in curtailing coarse grain and

soybean trade. A recent study published by the Economic Research Service[1/] indicates that exchange rates substantially reduced the volume of soybean trade, but that other factors masked the impact of a negative exchange rate. The key positive factor was a decline in foreign soybean production over the 2-year period (1981-1983) and a change in the internal pricing relationships within the European Economic Community that favored increased use of soybean meal. A decline in freight rates also helped because it tended to lower import prices for grains, oilseeds, and other products, thereby increasing foreign utilization.

Other conclusions concerning the eight demand factors considered (income and population growth, foreign crop production, USSR feeding/purchasing decisions, EC policy, foreign indebtedness, declining freight rates, and exchange rates) were:

- o No single factor was dominant across all commodities for the two year period studied.

- o While other factors reduced exports, declining freight rates had a surprisingly strong positive impact with additional exports of 1.3 million tons for wheat; 6.9 million tons for corn; and 0.4 million tons for soybeans.

- o The negative impact of the strengthening dollar was the most pronounced of the eight factors for coarse grains and soybeans/meal where, ceteris paribus, export volumes were 12.8 million tons and 3.3 million tons lower for the 2-year period, as a result of an approximate 30-percent real appreciation of the trade-weighted U.S. dollar.

- o The exchange rate impact for wheat (-3.8 million tons) ranked second, substantially behind the impact of larger foreign crop production in explaining the change in wheat exports.

Economic Structure of Export Markets

While a multitude of factors influence the competitive position of the United States in international agricultural markets, a more fundamental issue is the basic economic structure of those markets. Depending on the structure of those markets, exports may or may not respond to different factors like changes in commodity prices. The foundation for a policy of agricultural export expansion rests on the belief that a set of export-oriented farm policies will restore export competitiveness for American agriculture and in turn, will allow the United States to expand exports, more fully use farm and agribusiness productive and marketing capacity, earn additional foreign exchange

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1/ Dunmore, John and James Longmire. Sources of Recent Changes in U.S. Agricultural Exports. IED/ERS/USDA. January 1984.

thus helping to offset the large trade deficit, and stabilize and increase U.S. producers incomes.

In general, current farm programs assume that the international demand for U.S. farm products is inelastic. This assumption has justified a system of high price supports and production controls. Very simply, if demand is inelastic, reduced output increases prices and leads to increased farm incomes.

This is the reason that "elasticity" -- the responsiveness of demand for U.S. farm products to changes in price -- is one of the key factors to be taken into consideration in developing farm programs. If farm programs are based on an incorrect assumption about the elasticity of demand, then they will cause farm incomes to decline whenever they attempt to make farm incomes rise.

The elasticity of foreign demand for U.S. farm products has been the subject of widespread research (for a comprehensive review of this research, see Robert L. Thompson, A Survey of Recent Developments in International Agricultural Trade Models, USDA/ERS, Bibliographies and Literature of Agriculture No. 21, September, 1981). Many analysts have undertaken the complicated steps necessary to make such estimates. G. Edward Schuh in his assessment argues that the price elasticity of demand is in the range of 2.0 to 3.0 ("U.S. Agricultural Policy in an Open World Economy", Testimony presented before the Joint Economic Committee of the U.S. Congress, May 26, 1983, Washington, D.C.). Professor Luther Tweeten in an earlier analysis calculated the long run aggregate elasticity of foreign demand for U.S. agricultural exports to be between 6.4 and 16 ("The Demand for U.S. Farm Output," Stanford University Food Research Institute Studies 7(1967): 343-369). Professor Paul Johnson calculated a value of 6.7 ("The Elasticity of Foreign Demand for U.S. Agricultural Products," American Journal of Agricultural Economics, 59(1977): 735-6), and Hoopen and Wilson estimate a value of 1.47 ("Two Multi-Level Models of U.S. Merchandise Trade,..." , Discussion Paper No. 47, Division of International Finance, Board of Governors of the Federal Reserve System, Washington, D.C., June, 1974).

In the case of U.S. wheat exports (excluding PL-480), recent USDA investigations indicate a long term elasticity of foreign demand with respect to the U.S. loan rate of 1.70. These investigations indicate that this result is highly statistically significant and show that we can be 66 percent sure that the elasticity is between 1.47 and 1.93 and that we can be 95 percent sure that the elasticity is between 1.25 and 2.15. In otherwords, there is extremely strong evidence to indicate that foreign demand for U.S. wheat is elastic in the longer term. In a market where demand is elastic, a fall in price will increase sales value, since the increase in quantity shipped will more than offset the decrease in price.

If the elasticity of foreign demand is in the neighborhood of 1.70, as shown in these investigations, then a 10 percent real reduction in the loan rate would increase wheat exports by 17 percent

over about a 3 year period. This means that such a reduction would increase wheat exports by about 6.5 million metric tons after most major adjustments have taken place. It would also increase wheat farmers' incomes by about $235 million, or about $525 per wheat farmer.

Most important, although these investigations indicate that foreign demand is elastic with respect to both prices and the U.S. loan rate, they show conclusively that the single most significant explanation for fluctuations in foreign demand for U.S. wheat is fluctuations in the level of the U.S. wheat loan rate.

Of course, a reduction in the loan rate is not the same thing as a reduction in prices. Prices could continue to fluctuate at or above the loan rate. However, the reduced loan rate would remove the price certainty that currently exists for producers in competitor countries and improve our competitive position in foreign markets.

LDC Debt and Food Demand

Another major factor influencing U.S. farm exports since 1981 has been the weak demand from the LDC countries. At the end of 1984, many developing countries, especially in Africa and Latin America, were still struggling with debt, domestic economic crises, and relatively weak trade and financial trends.

Worldwide, economic growth rates increased substantially in 1984 from the sluggish pace of 1983. Growth in the U.S. economy outstripped the rate of other industrialized countries again in 1984, but by a somewhat smaller margin. Economic growth rates in Latin America, Africa, and the Middle East still lag other regions of the world, but a turnaround from last year's negative growth rates was achieved. Overall, the world economic growth rate was forecast to reach 4 percent in 1984, about double the year earlier rate.

Although economic growth has improved, some weakness persists. Unemployment rates in many European countries continued to increase in 1984, despite the broadening recovery. In addition, foreign exchange shortages in many regions, particularly developing countries, continued. Problems of these countries will continue to preoccupy policymakers in the field of trade and finance.

During the 1970s, many developing countries experienced rapid economic growth. With rapidly expanding export and domestic markets, oil price increases spurring the search for new energy supplies, and the overall need to finance higher domestic investment and import levels, many developing countries provided very attractive lending opportunities to international capital markets. The recycling of petro dollars by the commercial banks at close to zero and sometimes even negative real rates of interest -- is a well-known story.

After the turn of the decade, however, the situation in many developing countries deteriorated and by 1982, recession virtually

covered the Third World. Those developing countries which were successful in rescheduling external debts began to recover in 1984 while others sank further into crisis. Among the latter, there are few prospects for any quick return to earlier growth trends.

What turned a difficult situation into a crisis for many of the middle-income developing countries, in the early 1980s, was a withdrawal of major commercial banks from further lending. Without a continuing source of foreign capital, many of these heavily-indebted countries were unable to service their debt fully and on a timely basis. Most also had to curtail imports.

Decreases in agricultural imports were major contributors to the decrease in the total imports of the high debt LDCs. For example, total U.S. agricultural exports to 17 major debt countries dropped 20 percent ($1.3 billion), between 1981 and 1983, while total U.S. exports to these countries went down 40 percent ($16 billion). Thus the decline in agricultural imports has been less in percentage terms than the decline in other categories of imports. Declines in grain and oilseed exports accounted for a large proportion of the decline in U.S. agricultural exports to the major debt countries.

Trade Policy Practices

To keep U.S. exports growing, access to foreign markets for U.S. agricultural products is essential. Access is ofttimes restricted, and U.S. exporters often face competion aided by subsidies from competitor governments.

In developed countries examples of import restrictions are the importation of grains handled by government agencies or marketing boards, the use of import quotas and/or licensing as for beef and oranges in Japan, and the use of variable levies in Europe, to protect against imports that are priced below internal price guarantees.

Developing countries, also tend to have restrictive import regimes enforced by import licensing or in the case of basic food crops often directly controlled by state agencies. A few developing countries that can afford to, provide incentives to agricultural exports as a means of earning foreign exchange. Other developing countries use direct export payments or provide credit for their products. Some LDCs have sought to gain advantages through overvalued exchange rate, state trading arrangements, counter-trade deals, and export tax incentives.

The United States is the world's largest agricultural exporter, and a nation that depends on export markets for sales of two-thirds of its wheat crop, half its soybean crop, and 40 percent of its rice and cotton crops. It is essential that we continue to oppose strongly the restrictive and unfair trading practices of other countries.

Of particular concern are the subsidy practices of the European Community which result in losses of markets for U.S. exporters. These practices must be changed if the economic base of U.S. agriculture is to be strengthened. This requires a long-term commitment by the United States to seek changes in the GATT Subsidies Code that will bring about an elimination of export subsidies on primary products.

Such a commitment must be steady and uncompromising. Essentially, the EC and other nations must be persuaded to move toward a market-determined international trading system and away from a government interventionist system. The United States itself can usefully lead the way by moving away from protectionist policies for its own agricultural sector.

Food Assistance

The United States is the largest source of international food aid. Since 1954, P.L. 480 has shipped over 33 billion dollars of U.S. farm commodities to other countries. The United States is also a major source of food security for the world, partly because our storage programs permit us to respond to both emergency and non-emergency needs. And we have the largest program of technical assistance. Although often overlooked, the use of foreign currency funds generated by the sale of P.L. 480 commodities sometimes represents the largest source of U.S. funding for programs to improve domestic agriculture in recipient countries. Overall, U.S. agricultural programs including P.L. 480 make important contributions to agricultural development in the poorest countries.

In the last decade food aid, has declined as a proportion of U.S. agricultural exports. As a share of our commercial exports, food aid averaged 4.5 percent during 1974-83, a much lower percentage than during the 1960s; in 1984, the share was about 4 percent. The shrinking relative importance of food aid to our exports was due in large part to the rapid growth of commercial exports.

The magnitude and nature of LDC imports over the next several years will continue to be influenced by indigenous production and the ability to import commodities on a commercial basis. High population growth will continue to inhibit expansion of per capita production in many LDCs to little above the recent levels. In addition, income growth for these countries has slowed because import demands by developed countries for products of the LDCs have decreased and international credits are not available in sufficient amounts to facilitate servicing of past debt or supporting continued expansion of many of these economies. This slower growth has weakened the ability of the LDCs to import commercially.

LDC food deficits vary with definition. USDA's annual report on World Food Aid Needs and Availabilities, (July, 1984) covers 67 food aid recipient countries and estimates 1984/85 food imports under two

conditions -- Status quo and Nutrition-based. Status quo estimates are based on per capita consumption equal to the four-year, 1980 to 1984 averages. Nutrition-based is based on per capita consumption equal to minimum dietary standards established by FAO and WHO.

Estimates of status quo food import needs for FANA countries in 1984/85 are 31 million tons of which 12 million tons of food aid will be required. Nutrition-based food import needs are somewhat higher, at 47 million tons, with food aid needs of 26 million tons. U.S. shipments in 1984/85 under Titles I/II are estimated at 6.0 million tons; other countries ship additional amounts.

There are currently those who would increase U.S. food aid shipments. As an extreme case, an increase in U.S. food aid to a mid-1960s share of U.S. commercial agricultural exports would require 6 billion dollars. This would represent a 15 percent increase in total exports of U.S. farm products. It would be difficult to ensure that such an increase would be additional, because there probably would be some substitution of new food aid for commercial sales and the substitution rate would increase as the level of food aid increases. Furthermore, the United States would be increasingly open to criticism from other exporters that we are displacing their sales. In addition, the food aid character of such exports could be sharply eroded by the surplus disposal character, which was prevalent in the 1950s and 1960s. From a development viewpoint, such massive increase in food aid might discourage the trend toward market-oriented agricultural policies and self sufficiency in recipient countries.

Opportunities do, however, exist for a more modest increase in food aid. Recent declines in per capita food production in a significant number of LDCs, particularly in Africa, have increased food aid needs. Further, the external debt burdens of a growing number of LDCs and resultant decreases in foreign exchange availabilities for commercial food imports also increases food aid requirements.

Summary

Agricultural exports have become a major source of demand for American farm output. Farm export volume increased from 38 million tons in 1970 to 144 million tons in FY 1984. Even the 1984 tonnage was below the high achieved in 1980 when the U.S. shipped nearly 164 million tons of agricultural commodities to overseas markets.

The 20 million tons drop in farm exports between 1980 and 1984 brought with it a corresponding drop in farm income and rural asset values, and an increase in the costs of Government farm programs. This should not be surprising since under the current structure of farm programs, the Federal government stands ready to be a "market of last resort." This includes storage programs and land retirement

programs that act as a shock absorber and protect the farm sector against a drop in world demand and an increase in exports from other countries.

The reality that U.S. farm exports have dropped so substantially and the corresponding increase in exports from other supplying countries is only part of the argument for making major changes in the structure of U.S. farm programs in 1985. A more basic factor that favors this change is the recent analytical work that indicates that international markets for U.S. agricultural commodities are "price-responsive". These studies suggest that both buyers of agricultural commodities and producers of agricultural commodities in other countries are responsive over a period of time to changes in the prices they pay or receive for farm commodities. Buyers would purchase more at lower prices and other producers would produce less over a period of years if the guarantees provided by U.S. support programs are lowered.

Given that the latest analytical work indicates a long run "elastic" market exists for U.S. farm exports, policies like those implemented in the recent past will work against the economic interests of American agriculture. The first evidence of this appeared after 1981, when U.S. farm exports started to decline and other supplying countries started to increase acreages and exports. These trends, if continued, will result in the idlying of an ever larger amount of U.S. agricultural productive capacity. On the other hand, a restructuring of farm policies to take advantage of the more elastic foreign demand for farm products can result in a slow recovery of export markets for U.S. agriculture and an improvement in farm incomes and asset values, not to mention the positive effects on the agribusiness sector and the strengthening of the rural banking community.

Basically, the Congress and the Administration face the task in 1985 of turning farm programs in a direction that will take advantage of the only market with any significant expansion potential -- the export market. Legislation must facilitate an expansion of farm exports if the agricultural sector is to benefit in the longer term. This task begins with restructuring support prices so that U.S. farm commodities can compete on world markets against sales from other countries, thus putting pressure on those countries to slow the growth in their own production and exports. Of course, there must be some amount of economic "safety net" provided to U.S. farmers during the interim period while they regain some portion of the export market which has been lost since 1980.

Beyond these changes in basic commodity programs, there will continue to be a strong need for adequate export credit programs to tide the LDCs over the interim period until economic growth reestablishes their capacity to import farm products by selling more of their own products overseas. There are also other legislative changes that can facilitate more farm exports, including strengthening

our food aid programs, strengthening embargo protection for farmers, eliminating cargo preference requirements, and strengthening our commercial export credit programs. But none of these steps can be entirely effective unless we are able to reestablish ourselves as price-competitive in world markets. That is the first priority.

Table 1: U.S. AGRICULTURAL TRADE STATISTICS

Marketing Year	Exports Value	Exports Volume	Imports Value	Imports Volume	Trade Balance
	($Mil.)	(MMT)	($Mil.)	(MMT)	($Mil.)
1970	6,958	61.8	5,686	-	+ 1,272
1971	7,955	63.3	6,128	-	+ 1,827
1972	8,242	68.6	5,936	-	+ 2,306
1973	14,984	106.6	7,737	-	+ 7,247
1974	21,559	99.9	10,031	-	+ 11,528
1975	21,817	93.5	9,435	-	+ 12,382
1976	22,742	114.1	10,497	11.2	+ 12,250
1977	23,974	111.9	13,357	11.4	+ 10,617
1978	27,289	131.3	13,886	11.3	+ 13,403
1979	31,979	137.4	16,186	11.5	+ 15,793
1980	40,481	163.9	17,276	10.7	+ 23,205
1981	43,780	162.3	17,218	10.8	+ 26,562
1982	39,095	157.9	15,489	10.5	+ 23,606
1983	34,776	144.8	16,375	9.8	+ 18,401
1984	38,013	143.7	18,910	10.0	+ 19,103

Table 2: U.S. AGRICULTURAL EXPORT VOLUME FOR SELECTED COMMODITIES

FISCAL YEAR	WHEAT	CORN	RICE	SOYBEANS	COTTON
		--Million Metric Tons--			
1969/70	15.688	15.150	1.775	12.222	.643
1970/71	18.227	12.736	1.621	11.787	.957
1971/72	17.070	19.939	1.868	10.957	.692
1972/73	35.867	31.544	1.675	12.843	1.326
1973/74	26.756	31.006	1.696	15.092	1.318
1974/75	29.272	28.822	2.217	11.487	.892
1975/76	29.874	43.126	1.953	15.050	.782
1976/77	23.766	42.454	2.317	15.156	1.046
1977/78	31.813	49.112	2.276	19.686	1.378
1978/79	31.340	53.897	2.397	20.194	1.396
1979/80	36.066	61.417	2.955	23.833	2.047
1980/81	42.247	59.367	3.172	19.972	1.264
1981/82	44.609	49.608	2.911	25.477	1.556
1982/83	36.699	47.105	2.276	24.522	1.209
1983/84	41.700	47.001	2.293	19.198	1.498

Table 3. WHEAT AREA HARVESTED IN U.S. AND COMPETITOR COUNTRIES, 1970 TO 1983.

Year	United States	Total Competitor	EC	Canada	Australia	Argentina
			(million hectares)			
1970	17.6	26.1	10.9	5.1	6.4	3.7
1975	28.1	34.8	11.4	9.5	8.6	5.3
1980	28.8	40.4	12.6	11.1	11.3	5.0
1981	32.6	42.8	12.6	12.4	11.9	5.9
1982	31.5	44.4	13.0	12.6	11.5	7.3
1983	24.8	46.7	13.2	13.7	12.9	6.9
1984	27.2	45.1	13.6	13.2	12.3	6.0

Table 4. EXPORTS OF WHEAT FROM THE U.S. AND COMPETITOR COUNTRIES 1970/71 to 1983/84.

Year	United States	Total Competitor	EC	Canada	Australia	Argentina
			(million metric tons)			
1970-71	19.8	27.5	5.7	11.8	9.1	0.9
1975-76	31.9	32.8	8.6	12.3	8.7	3.2
1980-81	41.2	44.4	14.7	16.3	9.6	3.8
1981-82	48.2	48.6	15.5	18.4	11.1	3.6
1982-83	41.1	54.1	15.5	21.4	7.3	9.9
1983-84	38.9	59.1	16.0	21.8	13.5	7.8
1984-85	41.5	56.4	18.5	16.7	15.0	6.2

CHANGES IN AGE STRUCTURE AND RURAL COMMUNITY GROWTH

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Economic Development Division, ERS

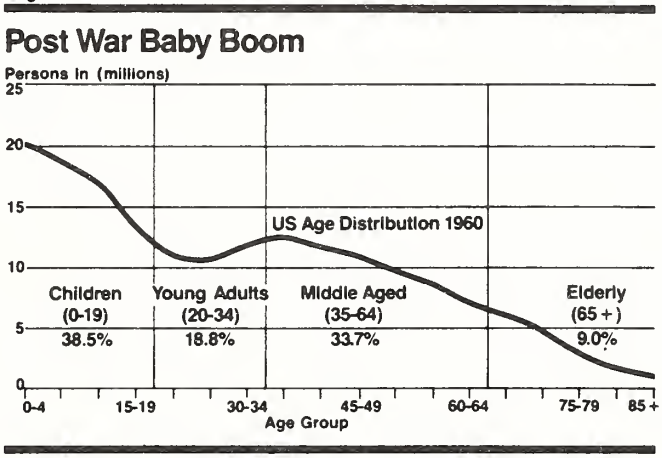
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Rural community growth is not an even process. First, overall population size changes as a result of migration into and out of the community. This overall growth has proven not only uneven but also somewhat unpredictable. In 1969, a panel of rural experts wrote of "The People Left Behind," and how the rural community would have to cope with continued decline. Less than ten years later, experts were writing of the "rural renaissance" and the problems of boom towns. Another aspect of uneven growth relates to changes in the age structure. During the 1970's, the population of nonmetro areas grew by 16 percent, but at the same time the number of households grew by 31 percent, nearly twice as fast, and the number elementary school students declined. Uneven growth stemming from changes in age structure are important not only in itself, but also for its bearing on other trends-on employment, crime and personal income, for instance. Unlike changes due to migration changes in age structure can be fairly well predicted and, because they can be fairly sharp they require anticipation on the part of both the public and private sectors. This presentation will focus on past and future changes in the age structure, dealing both with national changes and rural-urban comparisons.

While we will be focusing on change during the 1970's and 1980's, it is useful to begin with 1960, and contrast the changes during the 1960's with later change. The discussion is based largely on line charts which depict for a given year, the number of people in each age group, ranging from those under 5 to those 85 and over. In 1960, which was near the end of the post World War II baby boom, the line starts very high on the left and drops to a trough for the 20-24 and 25-29 age groups (Figure 1). The

Figure No. 1

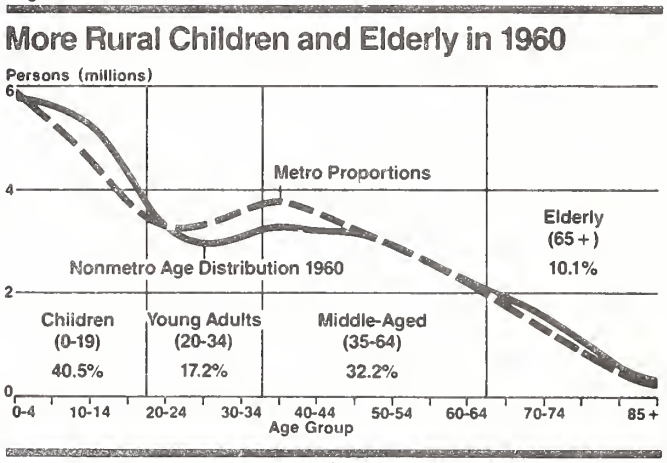


Source: U.S. Census of Population

people in these two age groups were born during the depression, when families had relatively few children. After rising slightly, the line tapers off to the right both because of mortality in older age groups and because these generations were relatively small.

To compare metropolitan and nonmetropolitan areas, I have charted the nonmetropolitan population first according to the actual age structure and second, adjusted to reflect the metropolitan age structure proportions. In 1960 the rural age structure was typical of declining areas (Figure 2). The outmigration of younger age groups had left rural

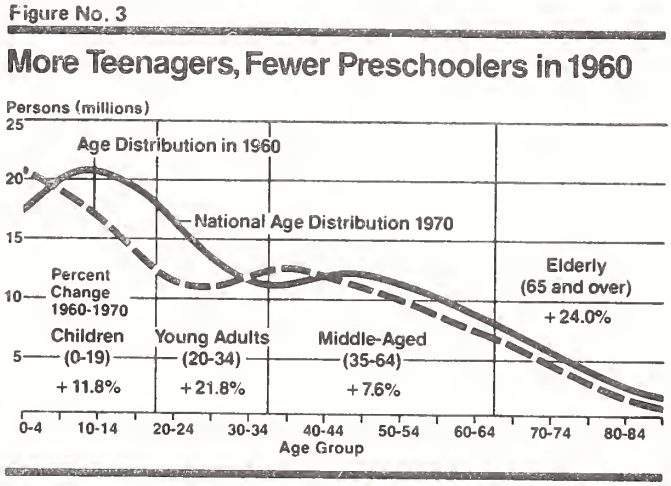
Figure No. 2



communities with a higher proportion of elderly in the population, and relatively few young or middle-aged adults. Historically high fertility had resulted in a relatively large number of rural children. Note, however, that the baby-boom had been having a greater effect in urban areas in the 1950's and that the proportion of preschoolers was actually higher in urban than rural communities.

During the 1960's, the baby-boom ended. The number of children under 5 years old was smaller in 1970 than it had been in 1960 (Figure 3). The baby-boom generation became teenagers during the 1960's. High

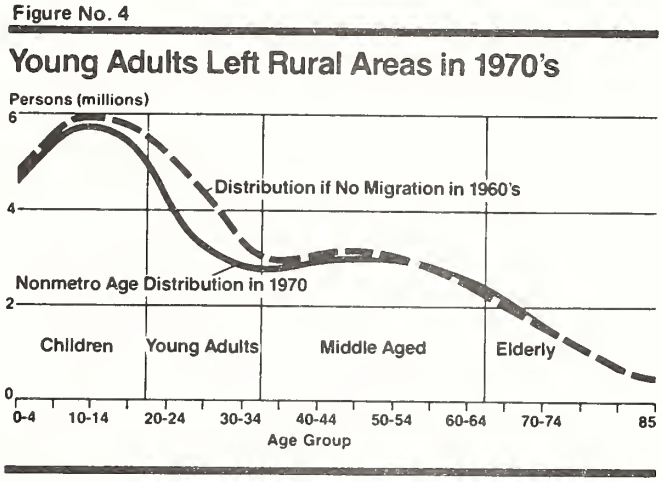
Figure No. 3



schools went into double-sessions, teenage unemployment increased and, in part because young people are most involved in the types of crime the FBI reports, crime rates rose as well. Due both to longer life expectancy and the relatively large number of people moving into retirement age, the population aged 65 and over increased by nearly 25 during the decade.

The pattern of rural-urban migration followed its historial pattern during the 1960's. A substantial proportion of those becoming young adults during the decade migrated out of small towns and rural areas into metropolitan areas (especially to the West) (Figure 4). The middle-aged,

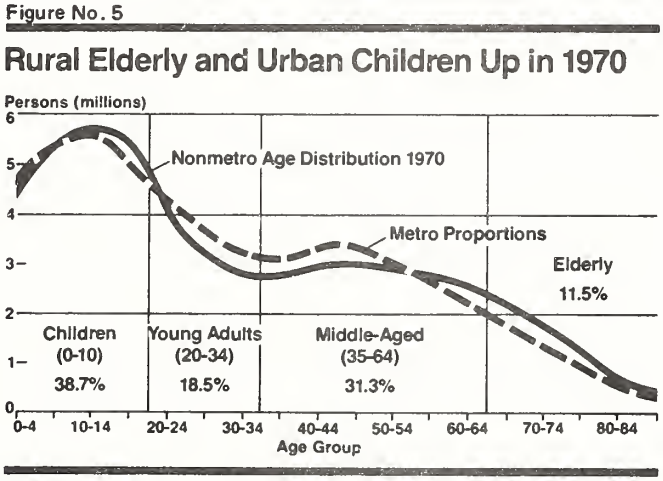
Figure No. 4



with children in school and often owning their home, are less geographically mobile than young adults and there was little net movement of the middle-aged during this period. A small number of people reaching retirement age moved out of the metropolitan Snow Belt cities into rural communities in both the North and the South and West between 1960 and 1970.

If we compare the metropolitan and nonmetropolitan areas, we see, first, that the proportion of elderly in the population has increased more rapidly in rural communities than in urban areas (Figure 5). This

Figure No. 5

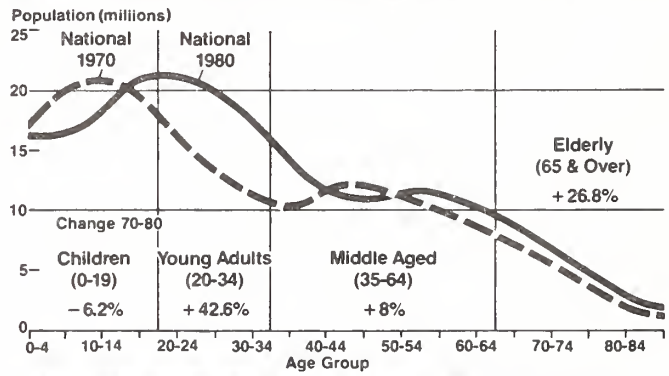


is also true for people nearing retirement age. Second, because of the continued outmigration of young adults, rural communities continue to have relatively few working-age people. Third, the differences in the proportions of children are now relatively small, largely because the baby-boom affected urban more than rural areas. The teenage population (ages 10-19), who would be entering the labor force in the next decade, had risen by 41 percent in metropolitan areas, but only by 15 percent in rural communities. This was a departure from the classic pattern where rural communities had a relative surplus of new labor market entrants.

The decade of the 1970's brought important changes in three of the age groups (Figure 6). First, the elderly population continued to grow,

Figure No. 6

Baby Boom's Adulthood; Fewer Children in 1980



by over 25%. About 30 percent of this growth can be attributed to reductions in mortality.[1] As a result of both changes in lifestyle and health care improvements, the increase in the life expectancy during the seventies was greater than in the previous two decades combined. Between 1960 and 1980, the total population increased by about one-fourth, while the population over 65 increased by more than half.

The second change was that the baby-boom generation moved almost entirely into young adulthood. This age group grew by over 40 percent during the 1970's, twice the rate of growth during the previous decade. The baby-boom generation has behaved quite differently from its parents. Today's young adults are less likely to marry. Those who do so are likely to marry later and have fewer children. Once married, they are also more likely to divorce. Young women, now with educational levels about equal to young men, are more likely to work than in the past, and most now continue to work even when they do have children.

The third change might be called the "baby-bust". Women in 1980 were, on average, having only half as many children as their counterparts

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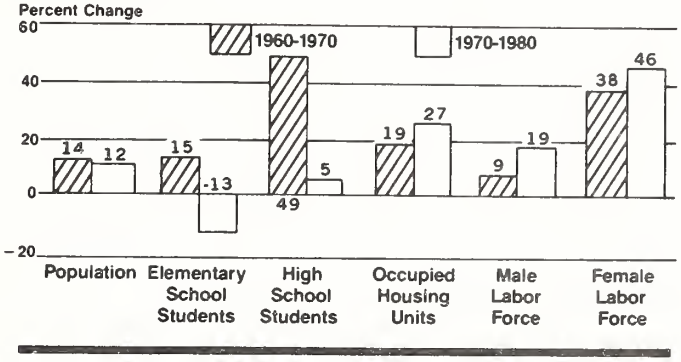
[1] Derived by applying the 1960-1970 age specific mortality rates to the 1970 population aged 55 and over and comparing the 1970-1980 gain expected on this basis to the actual gain.

in 1960. Thus, even as the young adult population increased, the number of children declined by 6 percent. The rate of decline appears now to be tapering off, but it seems clear the baby-boom generation is not going to replace itself in terms of the number of children it has.

While the Nation's population grew by a modest 11 percent during the 1970's, changes associated with shifts in the age structure were quite substantial (Figure 7):

Figure No. 7

Percent Change in Student and Work Force Populations



1) The number of elementary school students dropped over 13 percent, creating a surplus of schools and teachers.

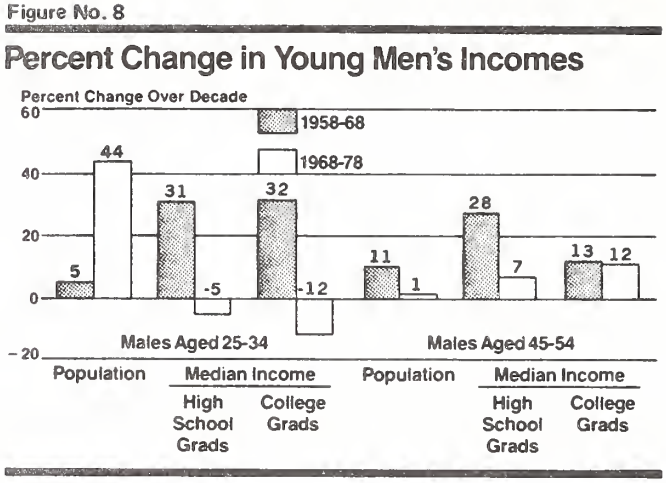
2) The number of high school students rose by only 5 percent, after increasing by half during the 1960's.

3) With the increase in young adult population, their postponement of marriage, and the lower mortality of the elderly, the number of households rose by 26.5 percent, putting considerable pressure on the housing market. With the increase in both the young and the elderly, the nature of housing demand also changed: the number of single person households increased by nearly half (46 percent) during the decade.

4) The rate of growth of the male labor force doubled from 9 percent to 19 percent, and the number of women in the labor force grew by 46 percent, up from 38 percent during the 1960's. These rapid increases in the labor supply created a downward pressure on wages and salaries, particularly for the young adults entering the labor market.

Evidence of this downward pressure on incomes is presented in Figure 8, which depicts changes in population and income over two decades (1958

Figure No. 8



to 1968 and 1968 to 1978), for both young (ages 25-34) and middle-aged (45-54) men.[2] From 1958 to 1968, the number of young adult men grew by only 5 percent, and the real incomes of high school and college graduates rose by over 30 percent. During the next decade, the baby boom generation moved into this age group. The number of young adult men grew by 44 percent, but real incomes fell by 5 percent for high school graduates and by 12 percent for college graduates. With the energy crisis and other economic problems, the 1970's were not a period of rapid income growth for any group. Nevertheless, for men aged 45 to 54, whose number remained fairly constant during the 1970's, real median incomes were higher in 1978 than in 1968.

The actual divergence in the economic fortunes of these two age groups during the 1970's was probably greater than indicated by the income statistics. Housing prices rose faster than inflation during the 1970's, both because of the rapid increase in the number of young adults looking for housing and because home purchase was seen as a hedge against inflation.[3] For the middle-aged, who tended to be home-owners, the value of their property rose. For young adults, acquiring a home became an increasingly difficult proposition. (From 1978 through 1982, the incomes of both age groups fell as the economy performed poorly. A partial recovery was made in 1983).

Richard Easterlin[4] has argued that economic aspirations are conditioned by the income experiences of one's childhood. The baby boom generation's delayed marriage, low fertility and high female labor force participation may in part reflect their attempt to maintain a standard of living consistent with their childhood experiences and aspirations. In

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[2] Women were not included here as their changes in income have in part reflected a shift from part-time to full-time work.

[3] The price index for new one-family houses sold rose 22.2 percent faster than inflation between 1968 and 1978. This was partially offset by a slower growth in interest rates.

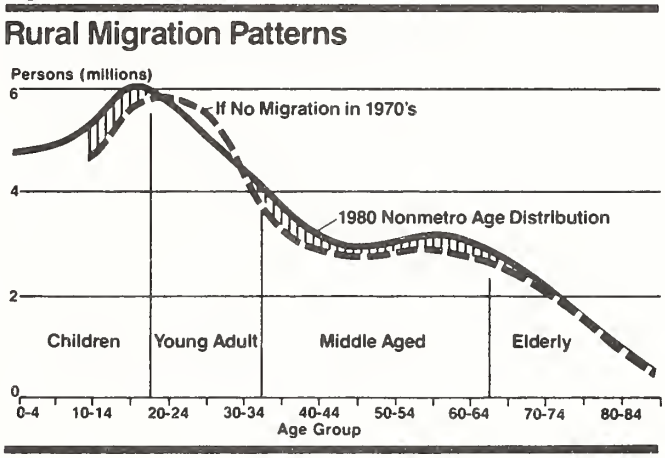
[4] Richard Easterlin (1980), Birth and Fortune: The Impact of Number on Personal Welfare, New York: Basic Books.

addition their reduced income prospects may make the baby boom generation less supportive than the young adults of the 1960's of social service and poverty programs. We tend to be less generous when our own pie is shrinking.

Other implications may also be suggested. The increased supply of relatively cheap labor probably facilitated the expansion of labor-intensive service sector industries during the 1970's. The large number of new labor market entrants and the reduction of off-farm opportunities for young adults slowed the decline in farm population. The young adult farm population declined by 43 percent in the 1960's, but by only 3 percent in the 1970's. In contrast, the middle aged farm population declined in both the 1960's (33 percent) and 1970's (22 percent).

More generally, the fact that metropolitan areas were generating a relatively large number of new entrants to the labor force may have inhibited rural-urban migration of young adults during the 1970's. With reduced net outmigration the number of young adults in rural communities grew by nearly half between 1970 and 1980 (figure 9). Also contributing

Figure No. 9



to rural community growth was the net movement into rural communities of other age groups, particularly people at or near retirement. With increases in social security payments of over a third in the 1970's and the labor market crowded by new entrants, people were retiring earlier in the 1970'S than they had in the 1960's and the movement of retirement age people to rural communities increased.[5]

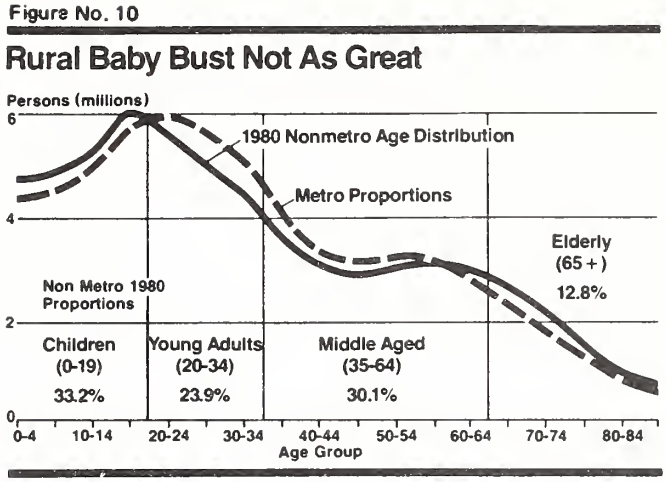
Rural communities in all regions of the country gained population through inmigration of middle-aged and elderly. Only in the Midwest was this inmigration exceeded by the net outmigration of young adults.

Like the earlier baby "boom", the baby "bust" was not as dramatic in rural communities as it was in urban areas (Figure 10). Thus, in 1980,

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[5] The proportion of males aged 60-64 in the labor force dropped from 75 percent in 1970 to 62 percent in 1979 (U.S. Department of Labor, 1971 and 1980).

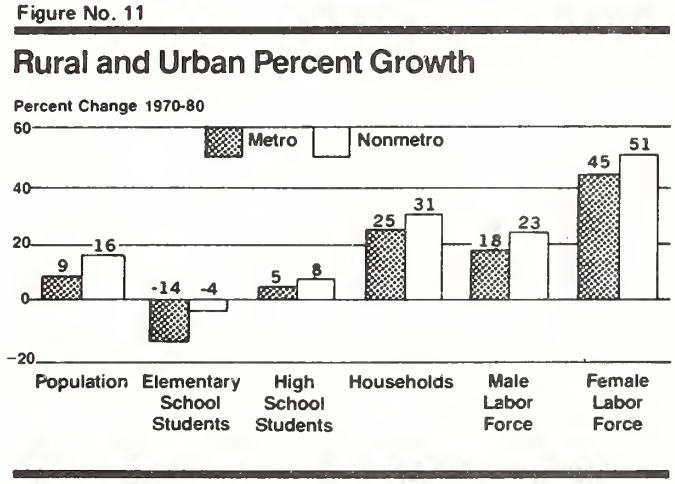
Figure No. 10



rural communities, compared to urban communities, again had a larger proportion of both elderly and children in their population. Unlike the situation in 1960, however, this was not the result of rural decline. Rather, the people moving into rural communities were at a different stage in the life cycle than those moving out. It should be noted that in spite of these differences, the basic age structures of rural urban communities were much the same in 1980.

During the 1970's, the rate of population growth in small town and open country areas was 50 percent higher than in metropolitan areas (Figure 11). With a smaller decline in fertility and the inmigration of

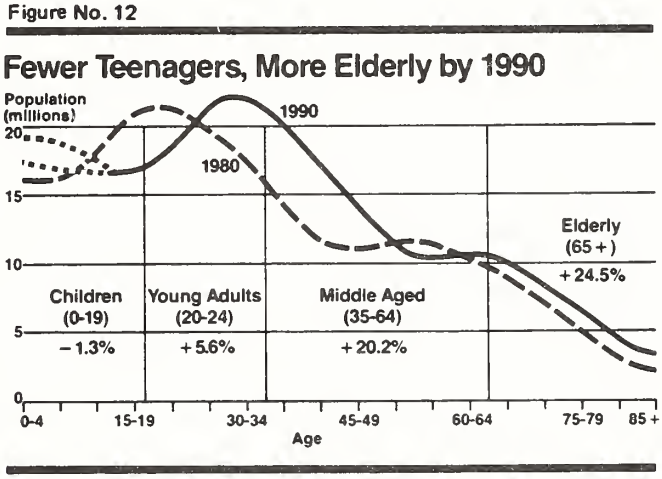
Figure No. 11



young families, the drop in elementary school students was considerably smaller in rural communities than in metropolitan areas. The number of households and the sizes of the male and female labor force grew more rapidly in rural than in urban communities. However, while rural communities had consistently higher rates of growth in each of these aspects, the overall similarities in their age structures meant that urban and rural growth followed the same basic pattern.

What then is the Outlook for the 1980's. No one is entirely clear how birth rates will change, but at this point it looks like the low projection may be more accurate (Figure 12). The teenage population will

Figure No. 12



drop, easing the problem of teenage unemployment and tending to reduce the crime rate. (There are now indications that that the crime rate is falling. High school and then college student populations will fall, putting pressure on poorer, more peripheral institutions. Colleges will probably be placing greater emphasis on adult education.

The young adult population will grow by only 5.6 percent (down from over 40 percent in the 1970's). This will reduce labor force growth rates and tend to raise wages and salaries, especially for the youngest age group. The growth in low-wage service sector industries will be slowed. The tendency for young people to move out of agriculture will increase. Assuming that the economy rebounds, immigration from abroad will be seen more favorably. The demand for housing will shift away from units for young singles towards both family units and housing for the retired population and begin to decline overall by the end of the decade.

The elderly population will continue to grow rapidly, by about 25 percent over the decade. During the past few years, social security has been under pressure in part due to longer life-expectancy and in part due to the withdrawal of the elderly from the work force. This has been offset in part by the growth in payments into social security stemming from rapid employment growth. But during the 1980's the growth in the working age population (ages 20-64) will be only about 12 percent, down from 21 percent in the previous decade. This points to greater stress on the social security system, and to the importance of proposed changes in tax laws to provide incentives to increase personal savings for retirement and delay that retirement. The real problem in supporting an elderly population will arise when the baby-boom generation reaches retirement age.

What about rural communities in particular? Available evidence indicates that migration into and out of rural communities now about even, (although the overall movement from the Snow- to the Sun-belt is

continuing). In general, population change will probably be less affected by migration during the 1980's, especially in the latter half as the baby boom generation moves toward the lower mobility of middle-age. This will tend to reduce the outflow from rural communities, as it is the young adult, particularly the 18-24 year old, age group which is most mobile. At the same time, age specific outmigration rates may accelerate somewhat because of the shortage of new labor force entrants in metropolitan areas. Differences among rural communities will probably increase. Midwestern counties dependent on agriculture will probably lose a higher proportion of young adults in this decade. On the other hand, the continued growth of the retirement age population will probably mean that those rural communities which are attractive to retirees will continue to grow.

Whatever migration pattern evolves, changes in the age structure mean that rural communities in general can expect a fairly stable elementary school population, a reduction in high-school population, a slower growth in new business and employment, and a continued increase in the elderly population.

It appears that in the coming decade, increasing pressure will be put on social service and income transfer programs. Rural communities, which have a relatively high proportion of both children and elderly, and of low income children and elderly in particular, stand to lose the most. Some funds will be shifted to defense and available evidence is that most of these industries are urban based.

Employment, however, is the topic of the next presentation. The central point here is changes in the age structure have been and will continue to be at least as important for local communities as overall changes in population size. These changes in age structure affect rural and urban communities alike.

EMPLOYMENT GROWTH IN NONMETRO AMERICA: PAST TRENDS AND PROSPECTS FOR THE EIGHTIES

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Economic Devlopment Division, ERS

1984 Agriculture Outlook Conference, Session #28
Washington, D.C.

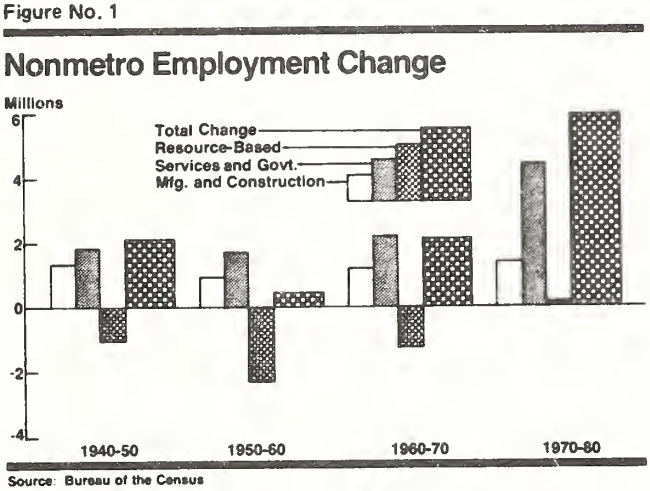
For Release 10:45 A.M, Wednesday, December 5, 1984

As Shakespeare so eloquently put it, "the past is prologue". We can better judge how the nonmetro economy will perform in the future, if we first understand how it has performed in the past. Therefore, before we present our employment growth projections for the eighties, we will review the history of employment growth in the nation's rural and small town communities. We will first focus on two growth periods, 1940 to 1970 and 1970 to 1980.

Historical Perspective

Between 1940 and 1970, employment increased slowly in nonmetro areas (Figure 1). Although many rural jobs opened up in manufacturing and construction, and government and the private service-producing industries, jobs losses in agriculture and other natural-resource industries such as forestry and mining were largely offsetting. Between 1940 and 1970,

Figure No. 1

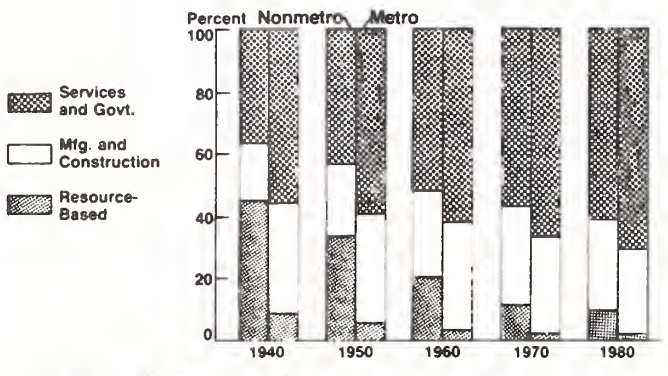


nonmetro areas were simply unable to generate enough new jobs to fully absorb additions to their labor force. As a result, many rural people migrated to metro areas to find jobs. During the fifties, nonmetro areas gained one job in manufacturing for every three they lost in the natural-resource-based industries. By the sixties gains in manufacturing were completely neutralizing losses in the natural-resource-based industries. Then, beginning in 1970 total nonmetro employment began to increase rapidly. Increases during the seventies occurred in private services and government, manufacturing and construction, and even in the natural-resource-based industries. Surprisingly, manufacturing employment continued to increase rapidly in nonmetro areas during the sixties and seventies while faltering in metro areas. One would have expected the "post industrial" faltering in employment growth in manufacturing to have occurred in both nonmetro and metro areas. Associated with the rapid employment growth was the well-publicized revival of rural population growth. The population growth rate was higher (one and a half times as high) in rural and small town communities than in metro areas during the seventies.

The cumulative employment increases in manufacturing, construction and the service-producing industries and declines in agriculture over the past four decades have dramatically transformed the industrial structure of the nonmetro economy (Figure 2). In 1940 the natural-resource-based industries provided more than four jobs out of every 10 in nonmetro areas; in 1980 they provided fewer than one job in 10. By 1980 the service-producing industries, and manufacturing and construction had come to dominate economic activity in nonmetro areas much as they do in metro areas.

Figure No. 2

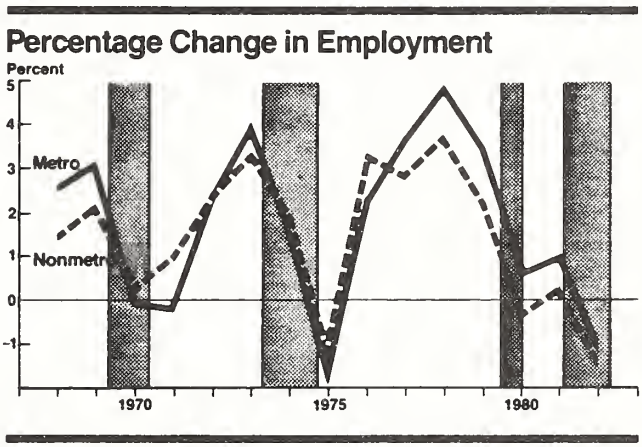
Industrial Distribution of Employment



Source: Bureau of the Census
Resource-based industries include Agriculture, Forestry and Fisheries, and Mining.

Because the mix of industries in nonmetro and metro areas has become more alike and because the nonmetro economy now appears to be more closely tied to the metro economy, we would expect changes in nonmetro employment tend to parallel changes in metro employment. And indeed, changes in employment growth over the last four business expansions and contractions have been similar in nonmetro and metro areas (Figure 3). Thus, it would appear that nonmetro areas now have a larger stake than they used to in many current and proposed Federal and state policies. These policies include not only overall Federal tax and expenditure levels and monetary policy, but such programs as enterprise zones, industrial revenue bond financing, tax incentives for manufacturing and high tech industries, and incentives for small businessmen.

Figure No. 3



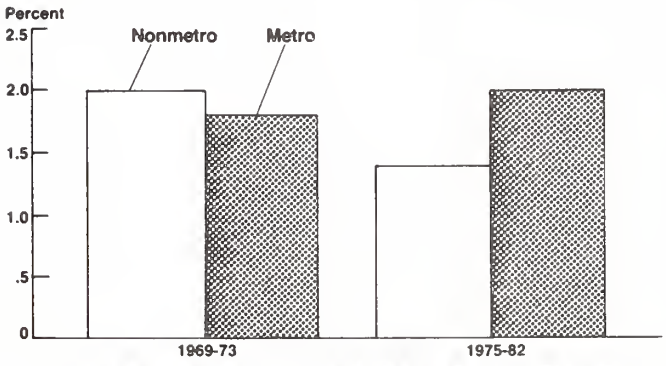
Source: Bureau of Economic Analysis, U.S. Department of Commerce
Percentage changes are from a year earlier. Shaded areas are recessions.

The 1969-82 Period

Now we will focus on the changes over a recent period, from 1969 to 1982. During the early part of this 13-year period, between 1969 and 1973, nonmetro areas outpaced metro areas in employment growth, but during the latter part of the period, between 1975 and 1982, they lagged behind metro areas. These two particular periods have been selected for comparison because each represents an entire business cycle. Not only did nonmetro employment growth slow in relation to metro growth during the late seventies and early eighties, but it slowed from its level in the early seventies (Figure 4). We can obtain a more complete picture of what was happening if we examine the industrial composition of the employment changes.

Figure No. 4

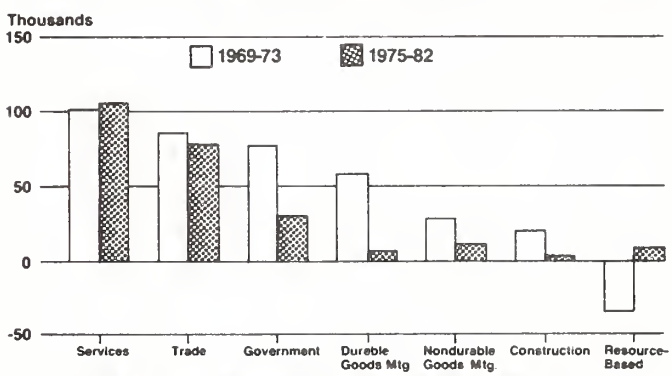
Employment Growth



Source: Bureau of Economic Analysis, U.S. Department of Commerce
The employment used in computing growth rates is total employment excluding military employment and the nonfarm self-employed. Growth rates are compounded annual rates.

Figure No. 5

Average Annual NonMetro Employment Change

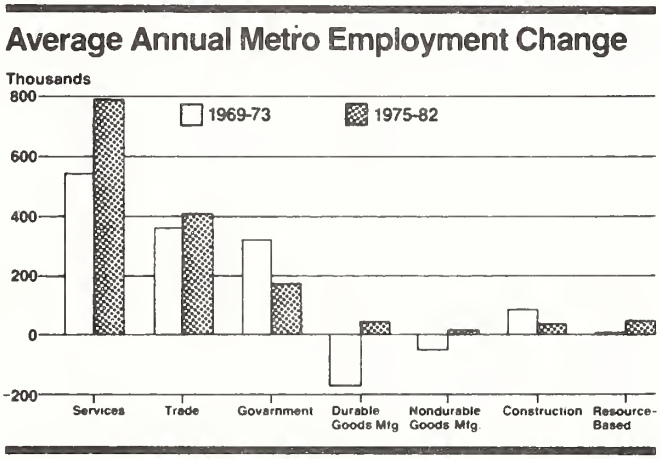


Source. Buresu of Economic Analysis, U.S. Department of Commerce
Government excludes military. Resource-based industries include agriculture, forestry and fisheries, and mining. Excluded from all the employment data are the nonfarm self-employed.

Between 1969 and 1973 the nonmetro expansion was pervasive with all industries, except the natural-resource-based industries, making a significant contribution to total growth (Figure 5). On the other hand, between 1975 and 1982 the nonmetro employment gain was largely concentrated in services, trade and government. By contrast, in metro areas, all industries provided more jobs per year between 1975 and 1982 than between 1969 and 1973 except government and construction (Figure 6).

During the 1969-73 period, all nonmetro industries except the natural-resource-based industries and government expanded at a faster rate in nonmetro than metro areas (Figure 7). But during the 1975-82 period, only employment in government and in the nondurable goods industry grew faster (Figure 8).

Figure No. 6

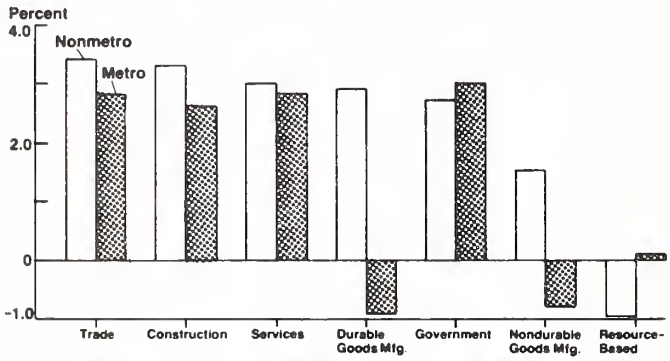


Source: Bureau of Economic Analysis, U.S. Department of Commerce
Government excludes military. Resource-based industries include agriculture, forestry and fisheries, and mining. Excluded from all the employment data are the nonfarm self-employed.

We still do not fully understand why nonmetro growth was so robust during the late sixties and early seventies and why it has subsequently slowed. Some have attributed the nonmetro growth spurt to such factors as a plentiful supply of nonmetro labor, a business climate more favorable than in metro areas, an increase in rural spending resulting from an influx of retirees into nonmetro areas, the effect of government rural development programs, the modernization of rural life, and the stabilization of employment levels in the natural-resource-based industries. However, it has been extremely difficult to measure the importance of these factors. It does appear likely that nonmetro growth was spurred during the late sixties and early seventies by the combined impact of many different favorable factors coming together at the same time. On the other hand, the rural growth slowdown since the mid-seventies also seems to be associated with an equally complex and imperfectly understood

Figure No. 7

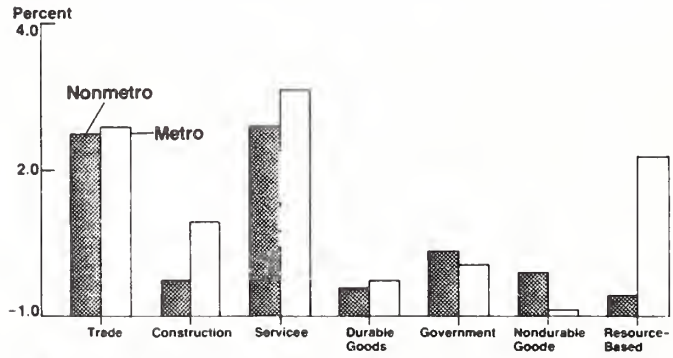
Employment Growth Rates, 1969-73



Source: Bureau of Economic Analysis, U.S. Department of Commerce
Growth rates are compounded annual rates. Government excludes military. Resource-based industries include agriculture, forestry and fisheries, and mining. Excluded from all the employment data are the nonfarm self-employed.

Figure No. 8

Employment Growth Rates, 1975-82



Source: Bureau of Economic Analysis, U.S. Department of Commerce
Growth rates are compounded annual rates. Government excludes military. Resource-based industries include agriculture, forestry and fisheries, and mining. Excluded from all the employment data are the nonfarm self-employed.

set of factors, including the increase in foreign competition. Some have alleged that there has been a large movement of jobs in the low-wage labor-intensive, routinized "cut and sew", and assembly-type manufacturing operations from rural areas to less developed countries where labor costs are extremely low.

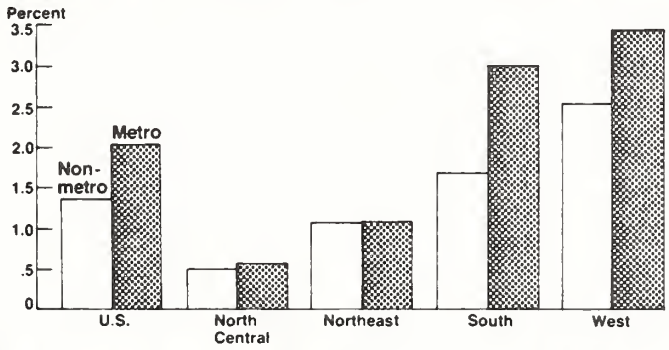
Regional Dimensions

There also are important regional dimensions to nonmetro growth (Figure 9). Differences in economic conditions among the nation's four major regions appear to have a similiar effect on both nonmetro and metro areas. Thus, between 1975 and 1982, we find that nonmetro growth was above the average for all nonmetro areas in the fast-growing West and South and below average in the slow-growing North Central region and the Northeast. Nonmetro employment lagged behind metro growth mostly because nonmetro growth was far lower than metro growth in the South.

On the other hand, nonmetro employment growth was slower between 1975 and 1982 than between 1969 and 1973 mainly because of the sharp reduction in growth in the North Central region (Figure 10). The North Central region, with its heavy dependence on manufacturing and agriculture, has been much more vulnerable than other regions to the increase in foreign competition and the cost-price squeeze in farming.

Figure No. 9

Regional Employment Growth Rates, 1975-82

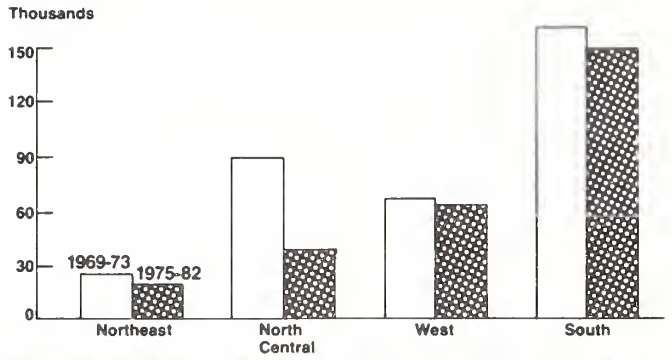


The employment used in computing growth rates is total employment excluding military employment and the nonfarm self-employed. Growth rates are compounded annual rates.

Source: Bureau of Economic Analysis, U.S. Department of Commerce

Figure No. 10

Regional Nonmetro Employment Growth



The employment used in computing growth is total employment excluding military employment and the nonfarm self-employed.

Source: Bureau of Economic Analysis, U.S. Department of Commerce

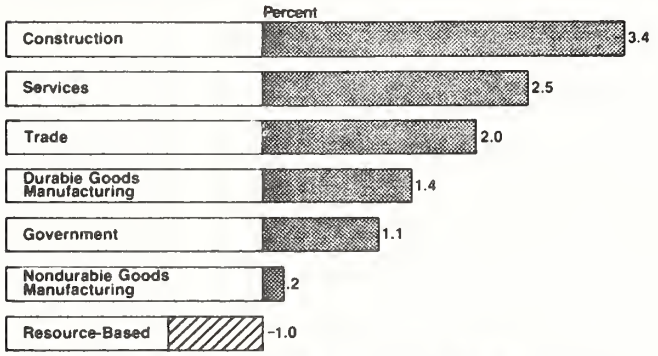
Projections for the 1980's

Once a nonmetro growth trend was well established, people generally expected that it would continue indefinitely. For example, support for governmental intervention to stabilize economic conditions in rural America reached a peak only after rural areas had been experiencing slow employment growth for nearly 30 years. It wasn't until 1968 that a national study of rural poverty was commissioned. Similarly, the turnabout in nonmetro employment and population growth in the early seventies was hailed as ushering in a new era of rural growth and prosperity and indeed it did reduce economic disparities between nonmetro and metro people. Now that rural growth has been lagging somewhat behind urban growth, it is easy to conclude that we are in for more of the same over the next several years. This is especially believable given the heavy concentration of slow-growing industries in nonmetro areas and the fact that nearly one-third of all nonmetro jobs are located in the economically depressed North Central region. In fact, as we now unveil our growth projections for the eighties, you may well conclude that we too have fallen into the same trap of extending recent trends.

Our growth estimates for the early eighties and to the year 1990 are based on employment projections for individual industries from the Wharton Econometric Models that were published in September 1984 (Figure 11). In making our employment projections, we assume that each industry will grow at the same rate in nonmetro as in metro areas. Although this assumption may appear somewhat simplistic, our results are little changed

Figure No. 11

Projected Growth Rates, 1982-90

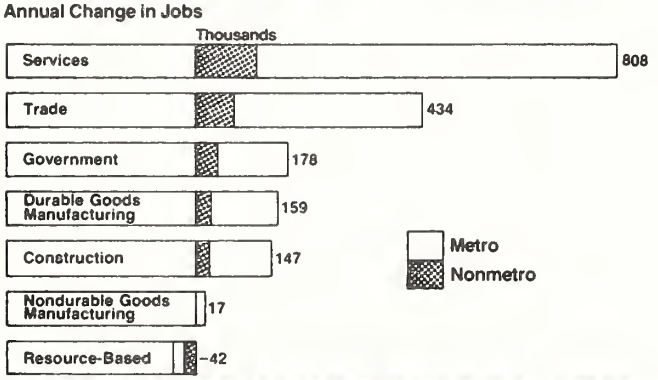


Source: Wharton Econometric Forecasting Asaociatas and U.S. Department of Agriculture
Government axcludes military. Growth ratas are compounded ratas. Resource-based industriaa include agricultura, forestry and fisheriaa, and mining. Excluded from all tha employment data ara the nonfarm self-employed.

Figure No. 12

Projected Growth, 1982-90

Annual Change in Jobs



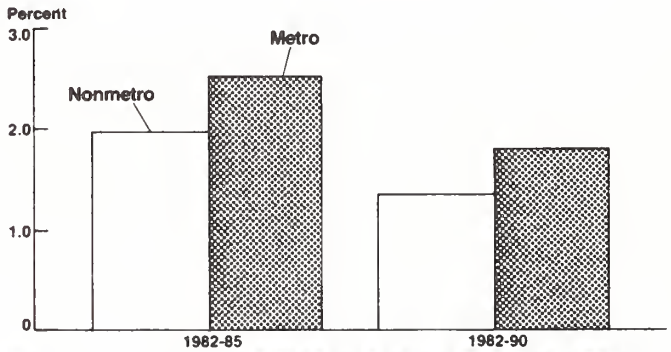
Source: Wharton Econometric Forecasting Aasociataa and U.S. Department of Agriculture
Government axcludes military. Resource-based industriaa include agricultura, forestry and fisharies, and mining. Excluded from all the employment data are the nonfarm self-employed.

when we incorporate into our model the same kinds of nonmetro-metro shifts among industries that have occurred since 1975. According to the Wharton models, growth is expected to be rapid in the construction and service-producing industries, moderate in government and durable-goods manufacturing, about zero in nondurable manufacturing, and negative in the natural-resource-based industries.

A moderate number of new jobs will be provided by government, durable goods manufacturing, and construction during the eighties. However, most of the new jobs will continue to be generated by the private service-producing industries as they were between 1975 and 1982 (Figure 12).

Figure No. 13

Projected Employment Growth Rates



Source: Based on projections by Wharton Econometric Forecasting Associates. The employment used in computing growth rates is total employment excluding military employment and the nonfarm self-employed. Growth rates are compounded annual rates.

Because nonmetro areas still depend more on slow-growing nondurable goods manufacturing and natural- resource industries and less on fast-growing services than metro areas, nonmetro growth is expected to continue lagging behind metro growth throughout the eighties (Figure 13).

How much confidence should we place in these nonmetro-metro growth projections? In answering this question, we need to keep in mind that large econometric models such as the Wharton models are much better at predicting changes when the economy continues to behave much as it has in the recent past. These models, of course, can not anticipate major international shocks to the economy such as a precipitous decline in the value of the dollar, a sharp deterioration in the world-wide credit situation or the erection of highly restrictive trade barriers. Nor do they take into account radical changes in domestic monetary, tax or expenditure policy. Such shocks would not only affect future expansion in total

U.S. employment but would also affect the distribution of growth among industries and among nonmetro and metro areas.

Summary

In conclusion:

Employment growth in the nation's rural and small town communities is expected to continue lagging behind growth in metro areas during the eighties. This is likely because nonmetro areas still depend more than metro areas on slow-growing nondurable goods manufacturing and natural-resource-based industries and less on fast-growing service-producing industries.

However, nonmetro employment growth during the eighties will probably be more rapid than between 1940 and 1970, when rural areas were adjusting to the large job losses in agriculture and other natural-resource-based industries.

For nonmetro areas to grow faster than metro areas would seem to require a sharp recovery in economic activity throughout the North Central region or a resurgence of growth in the nonmetro South. While such developments are possible, there appears to be little basis for forecasting them.

RURAL CREDIT IN A CHANGING FINANCIAL ENVIRONMENT

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1984 Agricultural Outlook Conference Session #28
Washington, D.C.

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OUTLOOK '85

Credit availability affects the employment and population changes which we heard about earlier in this session, through its impact on economic activity. Some people suggest that rural areas are treated differently, and are probably disadvantaged in their access to credit. We will look at the evidence of rural/urban credit differences; and at trends in financial markets which may affect rural America in the future.

Special Rural Credit Issues

Less diverse economies:

Rural economies are small relative to urban economies. They have fewer people, fewer jobs, fewer and smaller businesses. These rural economies are more often concentrated in a few activities than are their urban counterparts. This lack of diversity shows up in the loan portfolios of some rural banks, particularly those in heavily agricultural areas. Recently some of these banks have failed, while many others have suffered financial setbacks. Fourteen of the 58 banks which failed in the first 9 months of 1984, had over 1/4 of their loan funds in agriculture. The potential for such problems becomes evident, when one looks at the loan portfolios of all nonmetro banks. As of the end of 1982, nearly 1,300 of the 8,000 nonmetro banks, had over half of their loan funds in agriculture.

Profitable banks:

Despite the problems of some agricultural banks, nonmetro banks are generally both profitable and well capitalized when compared to metro banks (Chart 1). In mid 1984 the annual profit rate was 11.7 percent of equity capital for nonmetro banks and 10.0 percent for metro banks. And their equity position was also better, with equity capital 8.5 percent of assets, versus 5.7 percent for metro banks. In both items the nonmetro advantage was similar to that of earlier years.

Nonmetro banks have maintained their profit advantage despite getting a large part of their deposits in high cost ways. "Interest sensitive" deposits, those not subject to interest rate ceilings, were about 2/3 of both metro and nonmetro bank deposits in mid 1984.

Potential market disadvantages:

There are 3 types of arguments given for a rural disadvantage in credit markets:

1) rural communities have limited competition in financial services,
2) urban based markets discriminate against rural borrowers, and
3) rural banks perform poorly as intermediaries to national financial markets.

There are few local lenders in most rural communities, resulting in a less competitive market structure. This may explain the just mentioned higher profits of rural banks.

Many rural banks are either branches of, or are owned by, urban based organizations. However, we have seen no clear evidence of rural discrimination. Some suggest that urban based organizations use their rural operations to channel money to urban areas. Again there is no evidence of this; and it might be noted that independent rural banks can do the same thing by lending excess funds to urban banks.

A study of business loans, indicates that rural banks may only infrequently act as intermediaries between their communities and external sources of credit assistance. Sixty percent of the study banks had never sold a business loan in whole or part. Forty percent had never sold a loan or made a government guaranteed loan (Taff).

Any of these 3 types of market failure might mean that rural borrowers are not able to obtain credit on the same terms which are generally available for comparable loans nationally. We looked for evidence of such market failure by examining rural/urban differences in 3 types of credit where full access to national credit markets seems most likely to be denied.

Small Business: For small business loans there is no authoritative evidence on rural/urban credit term differences. However, there is evidence that established small rural businesses are generally as well satisfied with their lender relationships as are urban borrowers, but that they have fewer alternative lenders. Small businesses were asked what items were very important in a lender relationship and their current level of satisfaction with each surveyed item (Chart 2). Getting the "cheapest money" was mentioned as very important less often than were several other items. "Knowing you and your business" was important for more businessmen, and was also the one where rural businesses showed the biggest advantage over urban businesses in good lender performance. This speaks well for the ability of local rural banks to compete within their community. Generally rural businesses were as well or better satisfied with their lenders than were urban businesses.

Another study looked at sources of small business credit, as perceived by bank loan officers (Chart 3). Most communities, whether rural or urban had at least 2 banks actively making business loans. But, rural communities were less likely to have an active nonbank lender.

Home mortgages: Whether rural residents have a disadvantage or an advantage in home mortgage borrowing is unclear (Chart 4). Most of the nonmetro interest rate disadvantage which existed in 1971 had disappeared by 1981. Nonmetro homebuyers had an advantage in their downpayment, which was usually a smaller fraction of the purchase price than it was for metro homebuyers. However, the shorter time to maturity of nonmetro mortgages was a disadvantage.

Local government borrowing: Rural governments may pay slightly more for borrowed funds than do urban governments (Chart 5). Interest rate differences are negligible but nonmetro governments pay a larger underwriter's fee per $1,000 of bonds sold. The data does not show that nonmetro governments have trouble borrowing; or that higher fees are caused by anything other than the smaller size of their bond issues.

In summary the evidence just presented shows no persistent disadvantage for rural borrowers. However, this neither disproves nor proves the existence of a "rural credit gap." Despite our inability to resolve this issue, the fact remains that national financial market events affect rural areas.

Recent Events and Trends in Financial Markets

Recently financial markets have experienced considerable change in regulation, structure, innovations in technology and operation, and monetary policy (Chart 6). These events often, but not always, have had similar rural and urban impacts. Since the six-month money market certificate was introduced in 1978, the cost of funds for rural banks has been tied closely to national levels. Today, both rural and urban banks have about 2/3 of their deposits in accounts which are not subject to fixed interest rate ceilings.

The Depository Institutions Deregulation and Monetary Control Act of 1980 (DIDMCA) set a framework for major deregulation. It legalized interest bearing checking accounts and by 1986 will have phased out all interest rate ceilings on time and savings deposits.

Intrastate branching has been expanding steadily for many years, both through increased MBHC activity and by more liberal state branching laws. While 25 states now allow statewide branching, only 8 states retain unit banking restrictions and 5 of these allow MBHC's. This is an alternative to branching for accomplishing bank consolidation and expansion. Some 23 percent of nonmetro bank assets were held by MBHC owned banks in mid 1984. This is an increase from the 1982 level of 21 percent, but well below the metro level of 2/3.

Interstate branching is currently proceeding by 3 methods: 1) special purpose banks owned by out-of-state MBHC's handle activities such as credit card operations, avoid home-state restrictions on interest rates and annual fees, 2) nonbank banks look like banks but avoid the legal definition by not making commercial loans, and 3) regional interstate branching is restricted to a multistate region where states have entered reciprocal agreements to allow entry by outside HC's. Such true interstate branching within a region may soon be a reality.

Depending on the outcome of a Supreme Court challenge, the largest banking organization in Massachusetts may soon also rank second in Rhode Island and Maine, and fourth in Connecticut.

New technology is certainly a driving force in current financial markets. For example, at least 55,000 automatic teller machines (ATM's) are now in place. Almost half are in shared networks which allow consumers to withdraw cash from money machines owned by other banks. This is one of numerous innovations in bank operation which small and rural banks can buy into at a reasonable cost. Thus, innovations have generally not placed rural banks at a competitive disadvantage.

As with other industries which have experienced deregulation, change in the financial industry has been less than smooth. Thus, we may see some new regulations to deal with unforeseen market changes. Closing the nonbank bank loophole, revised bank capital requirements and risk-based deposit insurance premiums are all likely candidates.

The Outlook for Rural Credit

For most rural banks the day of low cost deposits is at an end. Rural banks must, and do, provide the higher paying deposits demanded in large numbers by their depositors. Because loan rates often reflect a bank's cost of funds, future rural credit terms will respond to national changes in step with urban credit terms. That financial markets are better integrated may speed rural economies toward their destiny, be it to grow or to decline. This may mean that chronically depressed rural areas will be hurt the most by greater financial market integration; but this is far from certain.

What is the likely future for financial institutions in rural communities? (1) Few existing rural banks will disappear, and in most rural communities the number of financial institutions is unlikely to decline. Some additional failures of banks with high levels of agricultural loans may be forthcoming; but on the whole rural banks are financially sound. And, while the number of banking firms may begin to shrink nationally, that does not translate to local markets. (2) The expanding reach of MBHC's will continue; and they will purchase more rural banks. Whether this is to the rural community's advantage depends on how the bank is operated. MBHC ownership might bring the advantages of new services, higher loan limits, and loan risk spread over the entire organization; or the disadvantage of rural market discrimination.

The growing integration of financial markets is drawing rural and urban economies closer. In aggregate most financial market events have similar rural and urban impacts. However, community differences in economic structure will continue to cause considerable variation in the responses of local rural areas to financial market happenings.

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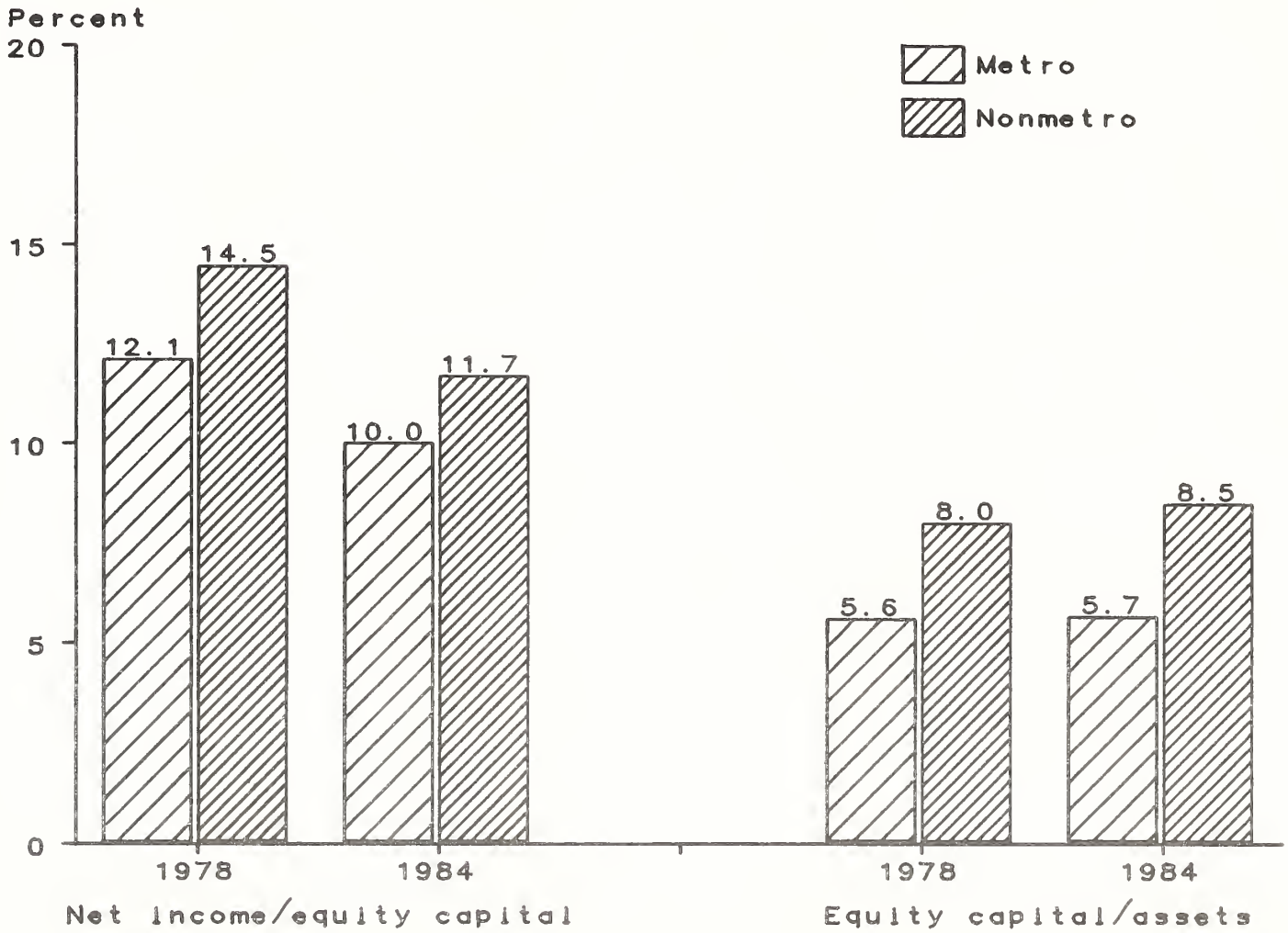
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Chart 1

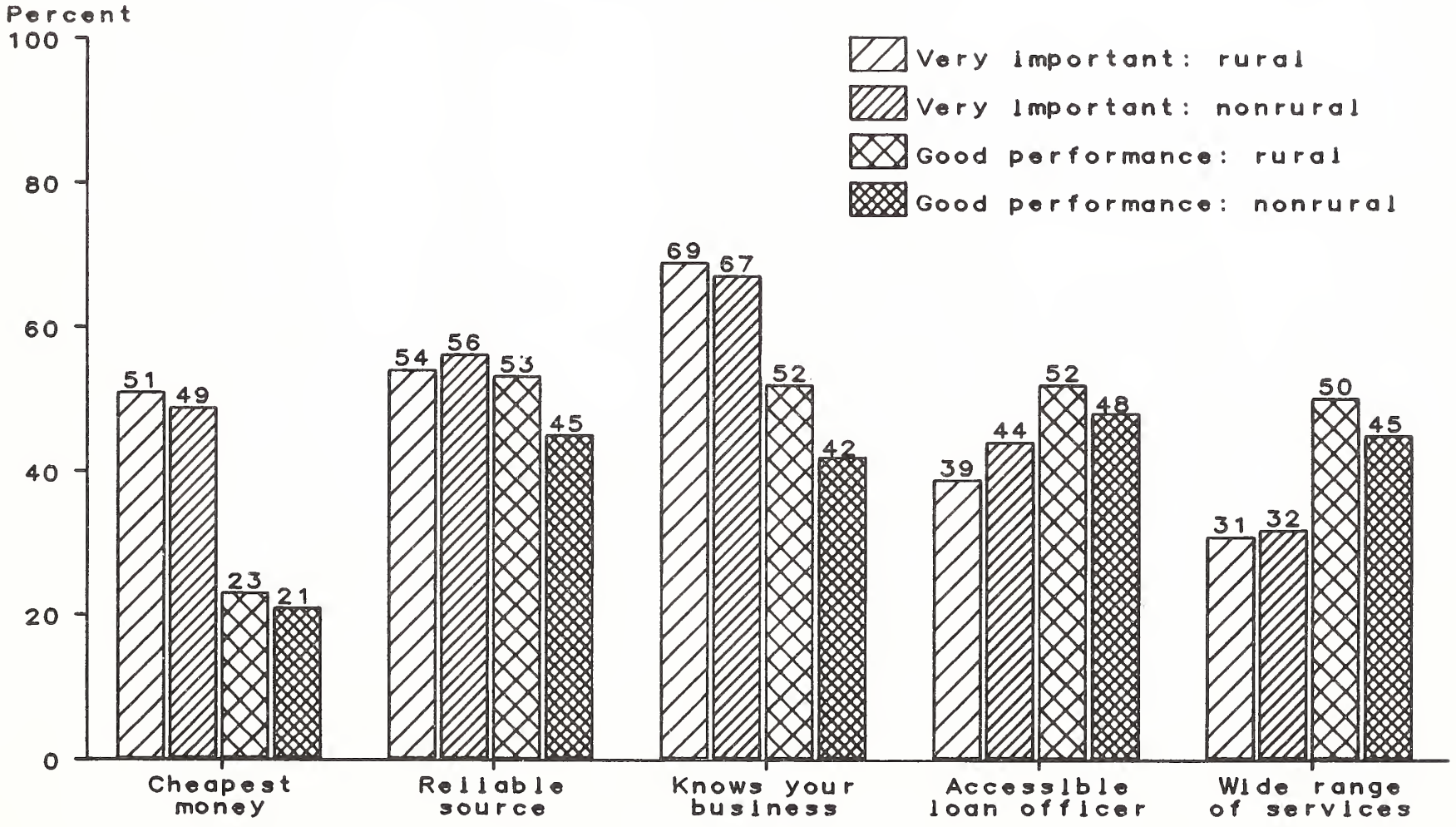
Annual bank profitability, midyear, 1978 and 1984



Source: ERS tabulations from Board of Governors, Federal Reserve Bank database.

Chart 2

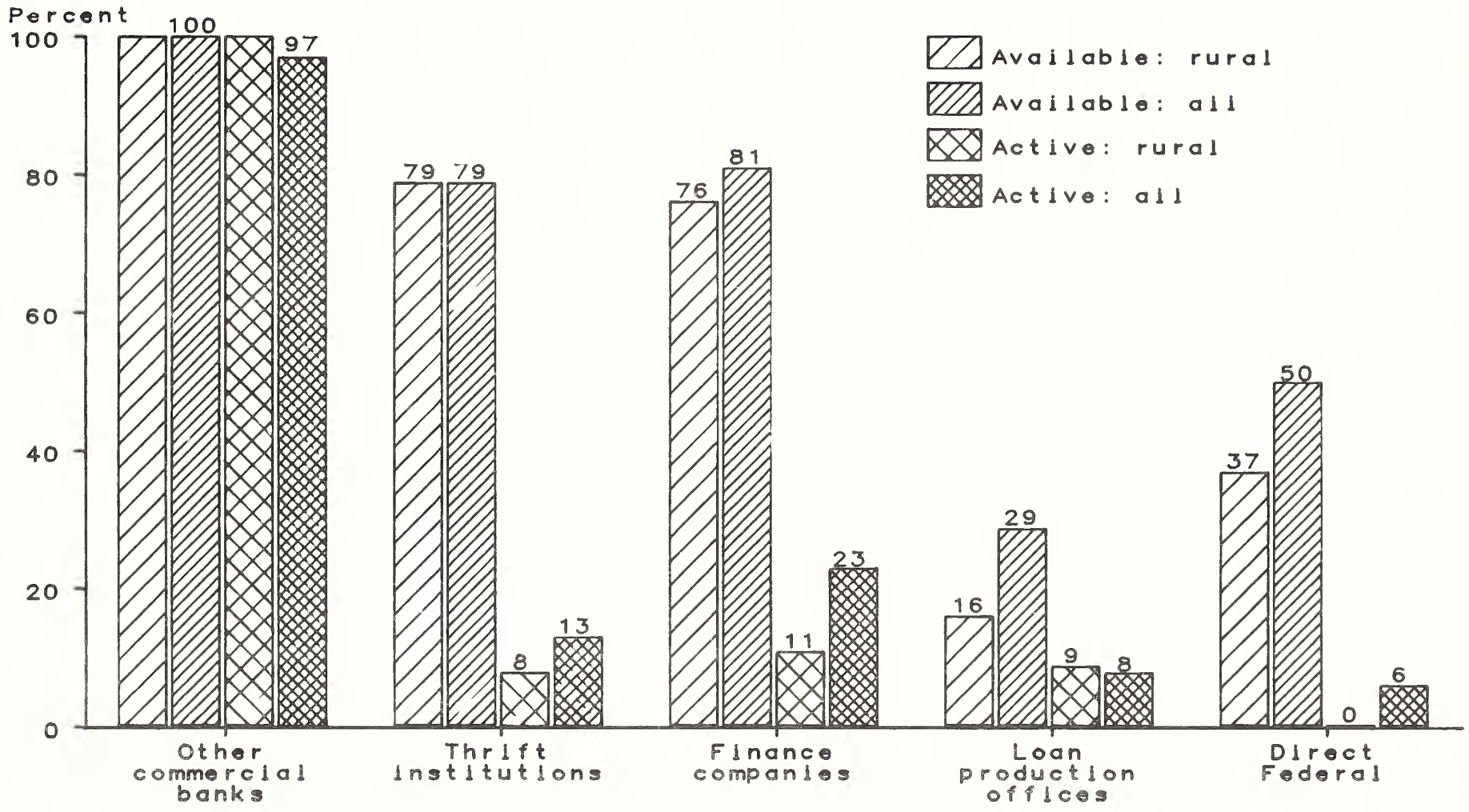
Banking relationships



Source: Adapted from tables 6 and 7 of Dunkelberg and Scott (1982). Based on an April 1982 survey of 2,349 members of the National Federation of Independent Business. 971 firms were rural (proxied by location in an area with a population of 15,000 or less).

Chart 3

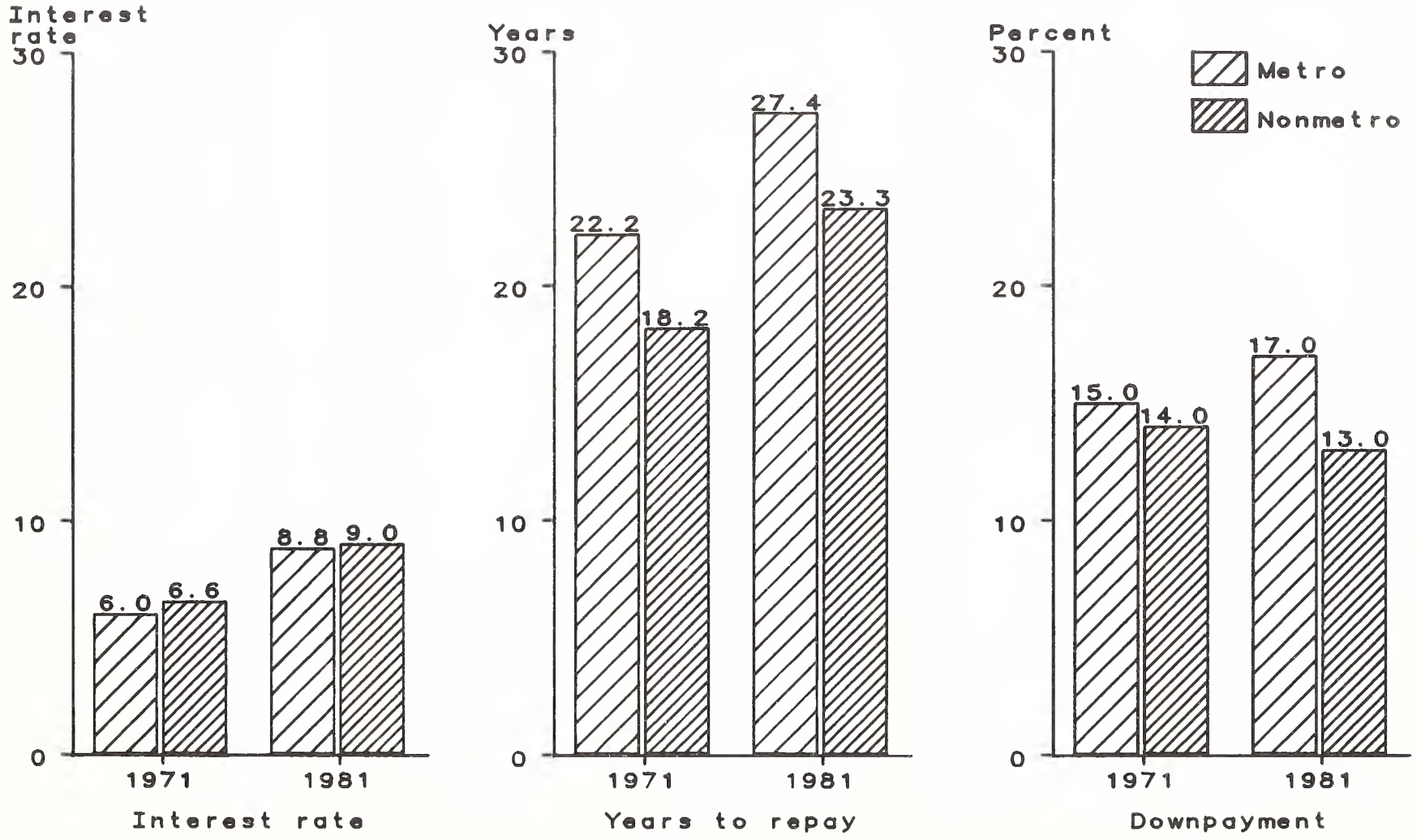
Bankers perceptions of Small Business Credit Availability



Source: Adapted from tables 11.1 and 12.1 of Glassman and Struck (1982), reporting on a survey of loan officers at 224 banks, 44 of which were located in rural counties.

Chart 4

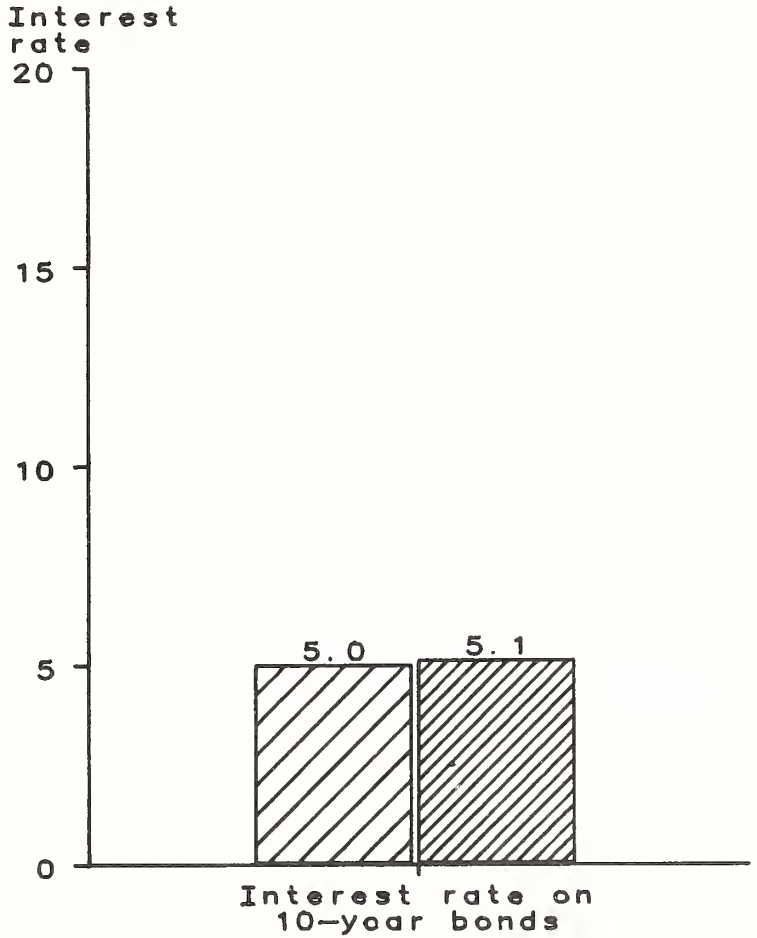
Lending terms on outstanding home mortgage loans

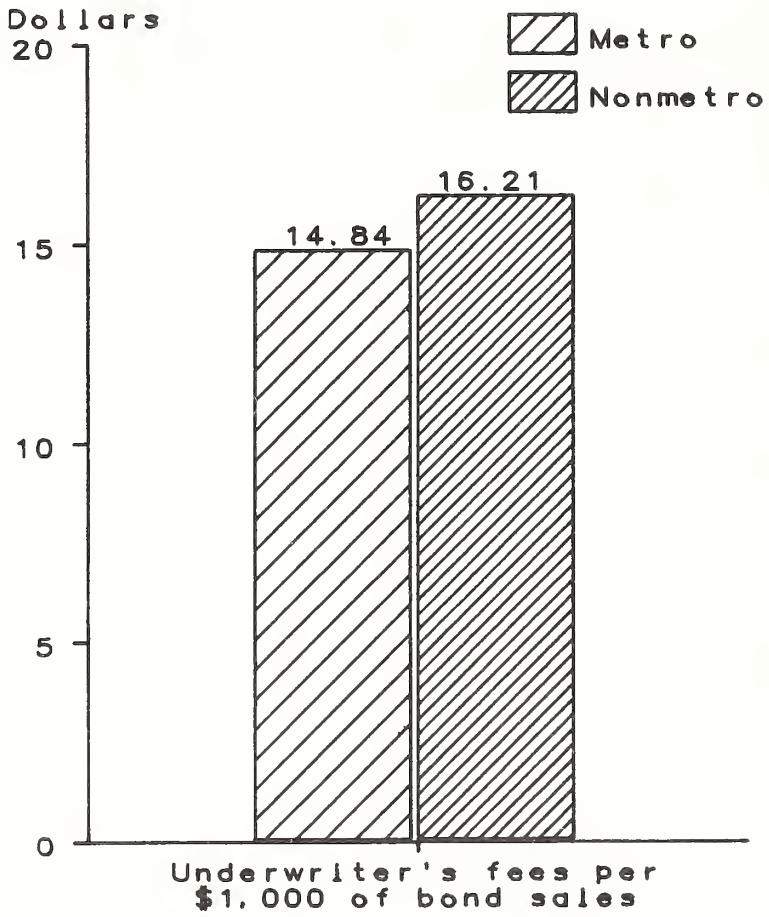


Source: Survey of Residential Finance, Bureau of the Census, 1971 and 1981.

Chart 5

Local government borrowing costs, 1977





Source: Sullivan, Patrick J, The Cost of Metro and Nonmetro Government Borrowing. RDRR 35, Economic Research Service, USDA, Wash., D.C. 1983. Calculated from Public Securities Administration data.

Chart 6

Financial Market Events

- 6-month money market certificates: 1978
  - The first small deposit without interest rate ceilings
- Federal Reserve Board starts targeting the money supply: 1979
  - Fights double digit inflation
  - Precedes record high interest rates and large interest rate fluctuations
- Depository institutions deregulation and monetary control act: 1980
  - Legalizes interest bearing checking accounts
  - Eliminates deposit interest rate ceilings (Reg. Q) by 1986
- Double digit inflation: 1979-1980
- Garn · St. Germain Depository Institutions Act: 1982
  - S and L's can make consumer and business loans
  - Emergency interstate mergers of financial institutions
- Intrastate bank branching expands
- Interstate branching
  - Special purpose banks
  - Nonbank banks
  - Regional reciprocity agreements

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INTRODUCTION

Increased world cotton production is expected to overshadow improved 1984/85 world consumption ,driving end-of-season stocks to record levels. Trade prospects are encouraging on a world level, but below 1983/84 for U.S. cotton which faces stiff competition from foreign suppliers harvesting larger 1984/85 crops. Projected foreign exports are up 13 percent. Largest gains are expected by Pakistan and Mexico, which experienced small 1983/84 crops, and China which is emerging as an important export factor.

PRODUCTION

Generally favorable weather and larger planted acreage in several major cotton producing countries point to a record 1984/85 world cotton crop. Production is estimated at 80.7 million bales, 20 percent above last season. Both foreign and U.S. crops are larger. China remains the world's top producer for the second consecutive year. Chinese production is estimated at 25.3 million bales, over twice its 1978-82 average and almost as large as the next two producers, the United States and the Soviet Union, combined.

I want to add that on October 26, China's State Council announced a new cotton policy reducing production incentives. During 1985, state procurement will be limited to 19.5 million bales. Production in excess of this level is to be sold in free markets at a free market price level. The policy calls for more rational planting of area and more extensive use of improved-quality varieties in light of demands by both domestic mills and foreign customers for better quality.

Pakistan, India, Brazil, Mexico, and Turkey also reported larger 1984 crops. Egypt, at 1.8 million bales, is the only significant cotton exporter reporting a smaller 1984 crop. Total 1984/85 foreign production is estimated at a record 67.4 million bales. China accounted for 38 percent of total foreign cotton production and is the major factor behind the increased production level; however, other countries have increased as I have pointed out. Even excluding China, foreign production will exceed 42 million bales, equal to the mid-1960's level for all foreign production-China included.

CONSUMPTION

World 1984/85 cotton consumption is projected modestly above last year at 69.5 million bales. Improved prospects are reported in several major producing countries--China, the Soviet Union, Pakistan, Turkey and Mexico. Each is virtually self sufficient and is also an important exporter. Prospects in net importing countries show only a slight increase. Prospects are almost flat in the important Western European and Asian markets. U.S. domestic mill use is expected to decline, primarily due to large cotton textile imports. Chinese consumption has grown dramatically over most of the last 10 years in spite of a two-percent decline in textile and cloth output during calendar 1983 and into the first half of calendar 1984. The lower textile output combined with increasing popularity of manmade fibers are reflected in the smaller 1982/83 consumption increase and the actual decline estimated for 1983/84. One factor is the increased popularity of manmade fibers following the Government's January 1983 price reduction for manmade fiber textiles.

A moderately larger Soviet crop is expected to increase supplies available for domestic consumption this season. Strong domestic demand is reported for textile products in the USSR and the introduction of measures to improve mill efficiency and product quality has recently been made.

In Pakistan, a more normal crop will provide increased supplies for domestic consumption which was hampered by the short 1983/84 crop. In recent years, Pakistan has increasingly emphasized the export of textile goods, creating an export demand for Pakistani yarn.

Consumption prospects are relatively flat in many Asian markets. Little change from 1983/84 levels is expected in Japan, South Korea or Taiwan. Together they accounted for 65 percent of the important Asian market. The Japanese spinning industry is apparently satified that its production cutbacks have been successful in reducing output to appropriate levels.

A small increase is forecast in South Korea where the textile industry has been operating near capacity, and most mills are reported to have a slightly larger export booking backlog than a year ago.

Improved consumption is forecast for Bangladesh, Indonesian and Thailand Bangladesh's consumption has trended upward since the denationalization of 22 textile mills in 1983. Thai prospects have been bolstered by brisk domestic and foreign sales of grey cloth and the need to rebuild sharply reduced stocks of textile goods.

TRADE

World 1984/85 cotton trade is projected at over 20 million bales, reflecting the emergence of China as an important cotton exporter and the resumption of more normal exports by Pakistan and Mexico. Chinese exports are forecast at a record 1.2 million bales, up from are estimated 750,000 in 1983/84. Principal markets are Hong Kong, Japan, Thailand, Indonesia and Bangladesh. Larger Pakistani and Mexican crops will result in more normal export levels and increased competition in important markets. The Soviet Union, an important exporter, has continued to be a less aggressive seller during the last two seasons.

STOCKS

World 1984/85 ending stocks are forecast at a record 35.2 million bales, an increase of 10.9 million above beginning levels. The record Chinese crop is the largest factor in the increase. China is expected to represent 44 percent of world ending stocks. Foreign stocks, excluding China, are expected to increase about 1.2 million bales. Foreign exporters expecting increases are Australia, Turkey, Pakistan, the USSR and Brazil. U.S. stocks are also forecast higher at 4.8 million bales, reflecting reduced domestic consumption and stiff export competition.

PRICES

International cotton prices declined steadily from May through September 1984. The "A" index of monthly prices dropped almost 1600 points from a May average of 88.9 cents per pound to the September average of 73.2 cents. Modest gains were reported in October, primarily as the result of wet weather in the United States which damaged crops and delayed harvesting. The average 73.7 cents during early November is only slightly above the October average of 73.6 cents per pound.

OUTLOOK

Recent trends in world cotton production and mill use suggest a broad outline of 1985/86 prospects. Foreign plantings have been increasing and even if the new Chinese cotton policy is successful in scaling back production to the 1983/84 level, foreign production will be large and may be exceeded only by 1984/85. Area planted in the Soviet Union and Turkey may be about the same as this season. World mill use is expected to increase moderately; however, competition will be stiff as China strives to develop export markets. World 1985/86 consumption is projected in the 70-72 million bale range. Prospective foreign use of 65-67 million bales, coupled with a foreign crop of 62-64 million, suggest a more pessimistic outlook for U.S. exports in 1985/86. U.S. exports could fall 500,000 bales below the 1984/85 level under this scenerio. China's exports on the other hand should increase in 1985/86 as large Chinese supplies will be available even if crop size is reduced.

Everyone has been concerned with long range implications of the recent realignment of China from a major importer to an important exporter. Official Chinese projections 1/ for cotton yarn production indicate an almost doubling of the 1980 level by the year 2000. The calendar 1985 cotton yarn target of 3.6 million tons is already 23 percent above the actual 1980 figure of 2.0 million. We have projected Chinese cotton supply and distribution out to 1990 in the next slide. Production is perhaps conservative at 22.0 million bales. We have increased consumption about 3 percent annually to a 1990 level of 19.5 million bales. Exports show a gradual increase to about 3.0 million bales in 1990. Stocks, as you see, remain large throughout the period. The implications seem to point to China as another strong competitor in our Asian cotton markets in coming years.

1/ China's Economy and Foreign Trade 1981-85, U.S. Department of Commerce.

AREA, YIELD, AND PRODUCTION WORLD AND SELECTED COUNTRIES AND REGIONS
(1,000 HA, 1,000 BALES AND MT/HA)

CONTINENT AND COUNTRY	AREA			YIELD			PRODUCTION		
	1982/83	1983/84	1984/85	1982/83	1983/84	1984/85	1982/83	1983/84	1984/85
	1,000 Hectares			KG/HA			1,000 Bales		
WESTERN HEMISPHERE:									
UNITED STATES	3,937	2,982	4,206	662	567	687	11,963	7,771	13,271
BRAZIL	2,113	1,960	2,050	308	277	319	2,985	2,495	3,000
MEXICO	204	245	310	921	923	878	863	1,038	1,250
ARGENTINA	360	490	520	310	311	335	512	700	800
COLOMBIA	56	119	224	587	644	617	151	352	635
PARAGUAY	240	280	320	333	321	340	367	413	500
PERU	83	95	120	433	713	717	165	311	395
NICARAGUA	90	117	110	847	614	564	350	330	285
GUATEMALA	49	51	45	933	982	1,210	210	230	250
EL SALVADOR	50	36	37	801	841	824	184	139	140
VENEZUELA	14	23	23	451	521	521	29	55	55
HONDURAS	4	7	7	762	653	622	14	21	20
ECUADOR	17	6	5	551	544	740	43	15	17
BOLIVIA	8	5	5	218	435	435	8	10	10
OTHERS	21	23	24	249	265	254	24	28	28
TOTAL.....	7,246	6,439	8,006	537	470	562	17,868	13,908	20,656
EUROPE									
GREECE	168	193	210	565	673	757	436	597	730
SPAIN	49	38	64	1,120	871	936	252	152	275
BULGARIA	13	13	13	335	335	335	20	20	20
YUGOSLAVIA	3	4	5	290	327	348	4	6	8
ITALY	3	3	3	218	218	218	3	3	3
OTHERS	28	28	28	272	272	272	35	35	35
TOTAL.....	264	279	323	619	634	722	750	813	1,071
AFRICA									
EGYPT	488	425	415	944	991	965	2,117	1,934	1,840
SUDAN	392	411	426	533	533	511	959	1,006	1,000
ZIMBABWE	138	191	190	435	429	430	276	376	375
CHAD	137	200	240	278	272	263	175	250	290
SOUTH AFRICA	105	99	120	257	347	363	124	158	200
TANZANIA	360	344	310	119	137	130	197	216	185
CAMEROON	60	65	65	399	462	452	110	138	135
UGANDA	468	600	600	025	030	31	54	83	85
NIGERIA	205	196	201	098	069	76	92	62	70
CENTRAL AFRICAN	68	71	83	093	169	157	29	55	60
MOZAMBIQUE	110	110	100	109	109	109	55	55	50
ZAIRE	200	200	200	054	054	54	50	50	50
MALAWI	35	35	35	218	218	218	35	35	35
MOROCCO	11	11	11	554	594	693	28	30	35
KENYA	150	145	110	061	057	59	42	38	30
ANGOLA	25	25	25	174	174	174	20	20	20
SOMALIA	12	12	12	127	127	127	7	7	7
OTHERS	584	593	599	363	349	370	974	952	1,019
TOTAL.....	3,548	3,733	3,742	327	319	319	5,344	5,465	5,486
ASIA AND OCEANIA									
CHINA	5,828	6,077	6,500	616	763	847	16,500	21,300	25,300
USSR	3,188	3,189	3,230	815	838	843	11,932	12,280	12,500
INDIA	7,871	7,765	7,900	175	165	171	6,324	5,879	6,200
PAKISTAN	2,263	2,277	2,290	364	209	352	3,781	2,188	3,700
TURKEY	595	614	675	822	847	839	2,246	2,388	2,600
AUSTRALIA	92	136	175	1,098	1,037	1,026	464	648	825
SYRIA	159	173	170	994	1,120	1,050	726	890	820
ISRAEL	56	57	64	1,547	1,623	1,514	398	425	445
IRAN	205	184	184	454	473	473	427	400	400
THAILAND	114	120	130	357	332	335	187	183	200
BURMA	217	231	230	160	165	166	160	175	175
AFGHANISTAN	50	50	50	435	435	435	100	100	100
IRAQ	65	65	65	218	218	218	65	65	65
SOUTHERN YEMEN	16	16	16	340	340	340	25	25	25
PHILIPPINES	10	12	11	457	399	475	21	22	24
KOREA, REPUBLIC	4	3	3	327	363	290	6	5	4
OTHERS	90	111	112	215	192	192	89	98	99
TOTAL.....	20,823	21,080	21,805	454	486	534	43,451	47,071	53,482
TOTAL FOREIGN.	27,944	28,549	29,670	432	454	495	55,450	59,486	67,424
WORLD TOTAL.....	31,881	31,531	33,876	460	464	519	67,413	67,257	80,695

NOTE: Totals may not add because of rounding.
— Denotes not available, unknown, or not applicable.
Harvest season beginning August 1
Bales of 480 lb. net.

SOURCE: Prepared or estimated on the basis of official statistics of foreign governments, other foreign source materials, reports of U.S. agricultural attaches and foreign service officers, results of office research and related information.

NOVEMBER 1984

FOREIGN PRODUCTION ESTIMATES DIVISION, FAS, USDA

U.S. COTTON: EXPORTS BY COUNTRY OF DESTINATION
(In Thousand of 480 pound bales)

Destination	Average	Marketing Year		August-September		September	September
	1976-80	1982	1983	1983/84	1984/85	1983	1984
Asia & Oceania:							
Bangladesh	77	88	135	2/	2	0	2
China Mainland	947	20	12	0	1	0	0
China, Taiwan	499	378	495	38	21	17	8
Hong Kong	430	158	283	12	25	4	10
Indonesia	241	268	320	49	44	26	22
Japan	1,233	1,286	1,709	232	149	100	63
Korea, Republic of	1,251	1,322	1,269	168	150	83	76
Malaysia	46	30	50	4	5	2	3
Philippines	110	72	59	12	7	9	4
Singapore	25	13	17	2/	2	0	1
Thailand	211	197	244	30	13	19	4
Other Asia & Oceania	68	3	122	1	13	2/	2/
Total	5,138	3,835	4,715	546	432	260	192
EEC:							
Belgium	15	12	66	1	5	1	1
France	66	45	154	7	10	4	4
Germany, Federal Republic of	104	163	195	12	16	8	11
Greece	57	109	18	0	12	0	1
Italy	111	105	252	13	39	7	21
Netherlands	13	7	6	0	2/	0	2/
United Kingdom	62	50	67	8	5	2	3
Other EC	26	68	79	9	14	4	8
Subtotal	454	559	837	49	100	26	49
Other Europe:							
Finland	10	9	9	1	2/	2/	0
Norway	5	10	11	2	2	1	1
Portugal	53	40	69	4	4	3	2
Spain	83	72	114	11	4	7	3
Sweden	19	23	28	3	5	1	3
Switzerland	89	53	70	1	4	1	1
USSR	1/	192	351	14	122	2/	0
Yugoslavia	1	112	119	33	47	2/	11
Other Europe	3	0	1	0	0	0	0
Total Europe	799	1,070	1,608	118	288	39	69
WESTERN HEMISPHERE:							
Canada	235	238	227	50	33	24	16
Chile	3	2	2	1	2/	1	0
Colombia	10	9	0	0	2/	0	2/
Other Western Hemisphere	13	6	108	15	1	7	2/
Total	261	253	337	65	34	32	16
AFRICA & MIDDLE EAST							
Ghana	16	6	18	4	0	4	0
Morocco	21	27	20	3	1	2/	2/
Other Africa & Middle East	86	16	88	6	3	4	2
Total	123	49	126	5	2	8	2
Grand total	6,321	5,207	6,786	742	758	339	280
Grand total (running bales)	6,010	4,959	6,434	705	722	322	266
Total value (Mil of dol)	2,078	1,652	2,364	252	282	115	105

1/ Not available. 2/ Less than 500 bales.

SOURCE: Compiled from data received from the U.S. Bureau of Census.
NOVEMBER 1984

- COTTON: WORLD STOCKS, PRODUCTION,
EXPORTS, AND CONSUMPTION BY AREA 1/
1978/79 - 84/85 (1000 480 LB BALES)

	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84 PRELIMINARY	1984/85 ESTIMATE	1985/86 FORECAST
BEGINNING STOCK:								
EXPORT NATIONS	19859	16740	15682	16148	19593	19551	19090	29990
US	5347	3958	3000	2668	6632	7937	2777	4756
USSR	2465	1895	2154	2585	2527	1845	2075	2125
IMPORT NATIONS	6267	5921	6179	5990	5885	5422	5223	5183
PRC	2500	1460	1548	2392	1892	3017	7817	15517
FOREIGN TOTAL	20779	18703	18861	19470	18846	17036	21536	30417
WORLD TOTAL 2/	26126	22661	21861	22138	25478	24973	24313	35173
PRODUCTION:								
EXPORT NATIONS	57503	63166	62577	68601	65589	65339	78451	0
US	10856	14629	11122	15646	11963	7771	13271	0
USSR	11907	12833	13498	13277	11932	12280	12500	0
IMPORT NATIONS	2136	2071	2226	2195	1824	1918	2244	0
PRC	9950	10100	12400	13600	16500	21300	25300	0
FOREIGN TOTAL	48783	50608	53681	55150	55450	59486	67424	0
WORLD TOTAL 2/	59639	65237	64803	70796	67413	67257	80695	0
CONSUMPTION: 3/								
EXPORT NATIONS	44392	46016	46770	47074	48321	48091	48797	0
US	6352	6506	5891	5264	5513	5926	5300	0
USSR	9075	9100	9150	9150	9200	9300	9500	0
IMPORT NATIONS	18912	19945	18983	19002	19541	20393	20741	0
PRC	13100	14100	15100	16200	16400	16000	16500	0
FOREIGN TOTAL	56952	59455	59862	60812	62349	62558	64238	0
WORLD TOTAL 2/	63304	65961	65753	66076	67862	68484	69538	0
EXPORTS:								
EXPORT NATIONS	19115	22675	19320	19657	18841	18686	19640	0
US	6180	9229	5926	6567	5207	6786	6065	0
USSR	3756	3770	4070	4295	3890	3500	3450	0
IMPORT NATIONS	606	500	394	535	414	606	582	0
PRC	15	12	6	0	75	750	1200	0
FOREIGN TOTAL	13541	13946	13788	13625	14048	12506	14157	0
WORLD TOTAL 2/	19721	23175	19714	20192	19255	19292	20222	0

1/ SEASON BEGINNING AUGUST 1.
2/ EXCLUDES COTTON AFLOAT, IN TRANSIT, AND IN FREE PORTS
3/ DOES NOT INCLUDE DESTROYED OR UNACCOUNTED.
4/ INCLUDES SMALL QUANTITIES REEXPORTED. FOREIGN TOTAL IS ACTUAL WORLD TOTAL MINUS UNITED STATES
COMPONENTS MAY NOT ADD DUE TO ROUNDING FAS TOBACCO, COTTON, AND SEEDS DIVISION, CP

OUTLOOK FOR U.S. COTTON

OUTLOOK '85

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1985 Agricultural Outlook Conference,
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U.S. cotton stocks are forecast to rise 2 million bales to 4.8 million by the end of this season, and stocks could rise even further during 1985/86. Stocks are rising, despite restrictive acreage reduction requirements in the 1984 and 1985 cotton programs, because of record yields in 1984, and because both mill use and exports are declining. Mill use has trended lower since the mid-1960's, and slower economic growth coupled with growing textile imports will likely cause that trend to continue. Exports averaged 5.7 million bales during the past decade, but increased production in China will make it difficult to maintain that average.

Decline in Mill Use To Continue

U.S. mill use is forecast to decline to 5.3 million bales during 1984/85 and could decline even further during 1985/86. A decline in seasonally adjusted rates of mill use is normal following the rebuilding of inventories during an economic recovery. However, during this season and next, sluggish economic growth and competition from imported textiles will push mill use lower than would normally be expected.

Mill use peaked at a seasonally adjusted annual rate of 6.4 million bales in January 1984, and has since moved lower. However, the decline was roughly consistent with patterns of mill use during past economic cycles. From November 1983 to September 1984, the 5-month centered average of seasonally adjusted mill use declined by about 12 percent, despite extraordinary rates of economic growth during the first and second quarters of 1984. A comparable period in the last business cycle was January-December 1976 (figure 1). During that period, the 5-month centered average of seasonally adjusted rates fell by 11 percent.

From January 1977 to August 1978, cotton mill use fell by about 4 percent. The slower rate of decline, compared with 1976, reflected a leveling off of business conditions once mill use fell to the level of consumer purchases of cotton goods. Likewise, mill use during 1985 and 1986 will probably continue down, but at a slower rate than during 1984.

The U.S. economy grew steadily at about 5 percent per year during 1976-78, and that limited the rate of decline in cotton mill use. In contrast, the U.S. economy will probably grow by much less in 1986 than it has this year. Also, the cotton textile trade deficit rose by only 150,000 bales from 1976 to 1978. However, that deficit might expand by more than that during the next two years. Therefore, mill use could decline at a rate greater than 4 percent during the rest of this season and next.

One factor in cotton's favor this year, in comparision with the previous business cycle, is that cotton's share of mill use on the cotton system has held at 60-61 percent since 1977/78. During 1976-78, cotton's mill use share fell from about 66 percent to its present level. That factor alone caused a 350,000-bale decline in mill use during 1976/77.

If mill use at seasonally adjusted rates during October 1984-July 1985 falls at an annual rate of about 6 percent, mill use for the 1984/85 season will total 5.3 million bales. If the rate of decline during 1985/86 remains near 6 percent, mill use will fall to about 5 million bales.

Textile Trade Deficit Wider Yet

Cotton textile imports equalled 2.3 million raw fiber equivalent bales in 1983, up from 1.9 million in 1982, and an additional rise of 30 percent to 3 million bales is possible during 1984 (figure 2). If U.S. economic growth slows, textile imports may decline by several hundred thousand bales during 1985/86. Each 100-bale change in cotton textile imports probably causes a change of 50 to 75 bales in U.S. cotton mill use.

Cotton textile exports totaled 458,000 bales in 1983, but could decline to about 430,000 in 1984. Each 1-bale change in textile exports has a full 1-bale effect on U.S. mill use.

The fundamental reason why the United State has had a trade deficit in textiles since 1961, is that our wage rates are higher than wages in most other countries. Total labor costs in the United States averaged $8.60 per hour during the spring of this year. In contrast, textile industry labor costs in Japan averaged $6.28 an hour, Hong Kong averaged $1.65 an hour, India averaged $.71 an hour, and labor costs in China were estimated at $0.26 an hour. These wage rates do not account for differences in labor productivity, and U.S. workers are more productive than workers in many other countries. However, productivity in the United States is not high enough to offset the large wage rate differentials, and foreign producers have a unit-labor cost advantage.

The acceleration in textile imports during the last 2 years was caused primarily by the strength of the U.S. economy and the rise in the value of the dollar. During 1960-83, cotton textile imports rose at an annual rate of about 6 percent, and during that period, the U.S. economy grew at an average rate of 3.2 percent. Each 1-percentage point increase in real GNP above 3.2 percent was associated with an additional 4-percentage point increase in cotton textile imports. During 1984, the U.S. economy will grow by about 7 percent, or 4 percentage points faster than the 1960-83 average. Consequently, cotton textile imports might have been expected to rise by 22 percent in 1984, and the strenth of the U.S. dollar probably explains most of the increase additional to that.

Production in China Threatens U.S. Exports

U.S. cotton exports are forecast to slip from 6.8 to 6.1 million bales during 1984/85 due to rising production in several foreign countries. An additional decline in exports could occur in 1985/86.

At seasonally adjusted annual rates, exports averaged 6.6 million bales during May-October 1984. Shipments plus outstanding sales for the current season totaled 4.6 million bales as of the end of October, compared with 4.2 million at the end of October 1983. However, with the advent of the harvest season in Pakistan and the Soviet Union, competing exporters whose supplies should increase this season, the pace of U.S exports will probably decline.

U.S. exports in 1985/86 may fall below 6 million bales. Production in foreign countries other than China could rise to about 42 million bales, while consumption could rise to about 48 million, a difference of 6 million bales. However, while stocks in foreign countries might rise again during 1985/86, China's exports could rise by an even greater amount, thus forcing U.S. exports lower.

Record Yields in 1984/85

The 1984 crop is estimated at 13.3 million bales, with yields forecast to average 613 pounds. But the range around the November production estimate is still fairly large. Sampling errors and variability in harvest weather could still cause the crop to end up as low as 12.4 million bales or as high as 14.2 million. During the last 10 years, the November crop forecast has differed from the final estimate by about 300,000 bales, on average. However, even a crop of 12.4 million bales would cause ending stocks to rise this season.

Strong Participation in the 1985 Cotton Program Likely

Secretary Block announced the basic provisions of the 1985 upland cotton program on September 14. Several provisions stand out in major importance for determining the 1985 participation rate.

o The 1985 target price will remain 81 cents a pound, the same as in 1984, but the average loan rate for strict low middling 1-1/16-inch cotton will rise from 55 cents a pound to 57.3 cents.

o To be eligible for target price and loan rate protection, farmers may plant no more than 70 percent of their upland cotton base acreage, and the balance must be devoted to conserving uses.

o The 30-percent reduction is divided into 2 parts. On 10 percent of the farm's acreage base, a land diversion payment equal to 30 cents a pound times the farm's program yield will be made to farmers, regardless of whether the farmer actually plants cotton. No additional payment will be made on the remaining two-thirds of the conserving use acres.

The 1985 program will benefit producers in several ways (table 1). Because the formula used to calculate program yields allows farmers to drop low-yield years, program yields have averaged about 14 percent above actual yields. The nearly 20-cents-a-pound assumed deficiency payment rate and the 30-cents-a-pound paid land diversion rate are also attractive, especially in relation to current farm prices. The program also enables producers to reduce variable production expenses, and insulates a portion of farm income from weather and price risks.

Based on possible market prices of lint and cottonseed, and yields of 540 pounds per planted acre, a nonparticipating farmer could expect a gross income of $38,000 off 100 acres of cotton in 1985. A farmer participating in the cotton program and planting only 70 acres, would receive only $27,100 from the market, even assuming a yield higher than 540 pounds. However, expected deficiency and diversion payments, based on an average program yield of 630 pounds per acre, would bring the gross income of a participant up nearly equal to that of a nonparticipant.

Average variable costs per planted acre are estimated at $265, and the cost of maintaining an acre devoted to conserving use is estimated at $25. Because program participants will plant no more than 70 percent of their base acreage, variable expenses per 100 acres are reduced by over one-fourth. Consequently, the net income of a program participant could be 60 percent higher than the net income of a nonparticipant (the participant-nonparticipant ratio would be 1.60).

The United States operated, for the first time since 1972/73, acreage reduction programs for cotton during 1982/83 - 1984/85. During those years, program participation increased as the ratio of participant net returns over nonparticipant net returns increased (figure 3).

Participation in the 1982 program averaged 78 percent, meaning that 78 percent of the base acreage of 15.3 million was enrolled in the program. The participant-nonparticipant ratio for 1982 was 1.83. Participation in the 1983 acreage reduction program rose to 93 percent because the participant-nonparticipant ratio reached 2.13. The participant-nonparticipant ratio declined to 1.21 in 1984, and participation fell to 71 percent.

Table 1.--Comparison of net returns for cotton program participants and nonparticipants in 1985

	Participant	Nonparticipant
Income		
Planted acres	70	100
Lint yield	550	540
Market income	27,100	38,000
Program yield	630	
Deficiency payment	8,700	
Land diversion payment	1,900	
Total	37,700	38,000
Variable costs	19,300	26,500
Net returns	18,400	11,500
Ratio	1.60	

Based on an estimated participant-nonparticipant ratio of 1.60, 1985-program participation of 75-80 percent is indicated. While different assumptions can lead to different participant-nonparticipant ratios, use of a consistent set of assumptions to calculate the ratios for all years yields logical results. This methodology led to an estimate that the 1984-program participation rate would be about 70 percent. The actual 1984 participation rate was 71 percent.

If the participation rate in 1985 reaches 75-80 percent, total upland cotton plantings could be between 9.5 and 11 million acres. Assuming normal abandonment of planted acreage, production will depend on highly variable yields. If yields should again reach 1984's record 613 pounds per harvested acre, output would reach about 12.5 million bales. on the other hand, if yields fall back to 1983's drought reduced level of 504 pounds, a crop of 10 million bales would result.

Use-to-Supply Ratios Down

During 1970/71-1983/84, total use of U.S. cotton (mill use plus exports) averaged 12 million bales, and no trend either up or down was apparent. Total use fell to 9.8 million bales in 1974/75 because of the world recession, and use exceeded 15.7 million bales in 1979/80 because of record exports to China. Following both unusual years, total use tended back to the 12-million-bale level.

While disappearance of U.S. cotton may return to that level sometime in the future, exports and mill use will probably fall to 11.4 million bales this season, and to less than 11 million in 1985/86 (table 2). Consequently, the ratio of use to supply will probably decline. In the past, a decline in this ratio has coincided with weaker farm prices. The major factors affecting demand for U.S. cotton are slower economic growth, textile imports, and rising foreign production. These factors are likely to continue as problems for several years.

Table 2.--Cotton supply and use

	1983/84	1984/85 estimated	1985/86 forecast
Planted acres	7.9	11.1	9.5-11.0
		Million bales	
Beginning stocks	7.9	2.8	4.8
Production	7.8	13.3	10.0-12.5
Supply	15.7	16.1	14.8-17.3
Mill use	5.9	5.3	4.5-5.5
Exports	6.8	6.1	4.0-6.5
Use	12.7	11.4	8.5-12.0
Unaccounted	-0.2	0.1	0.1
Ending stocks	2.8	4.8	4.0-7.0
Use/supply	.81	.71	.55-.75

FIGURE 1

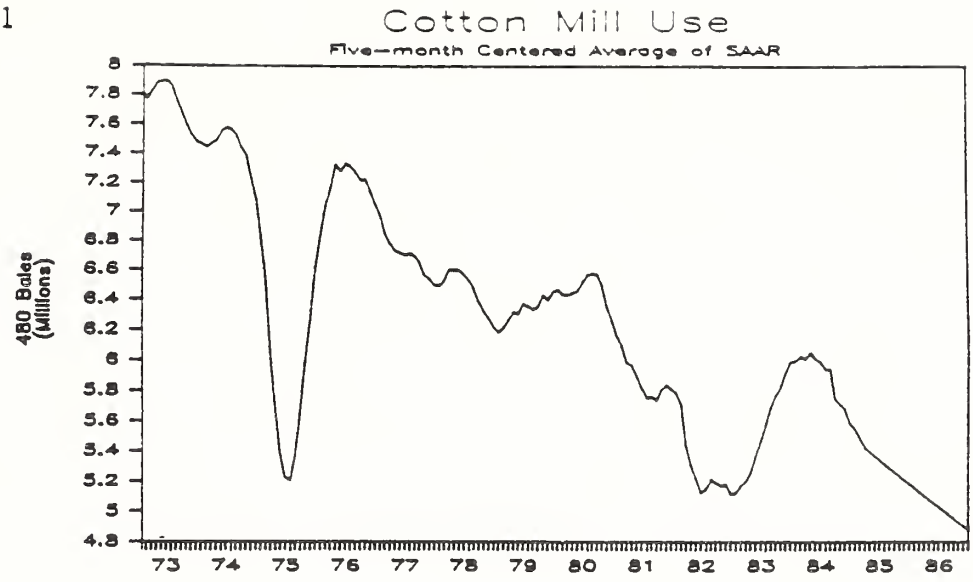


FIGURE 2

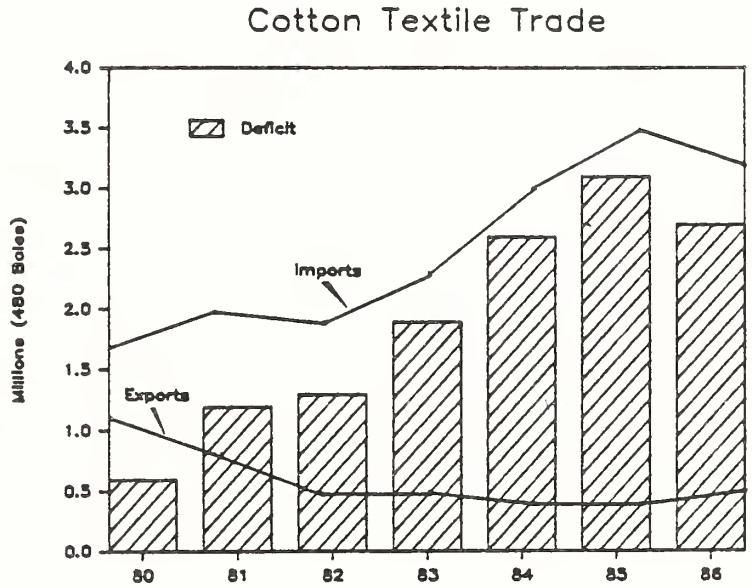
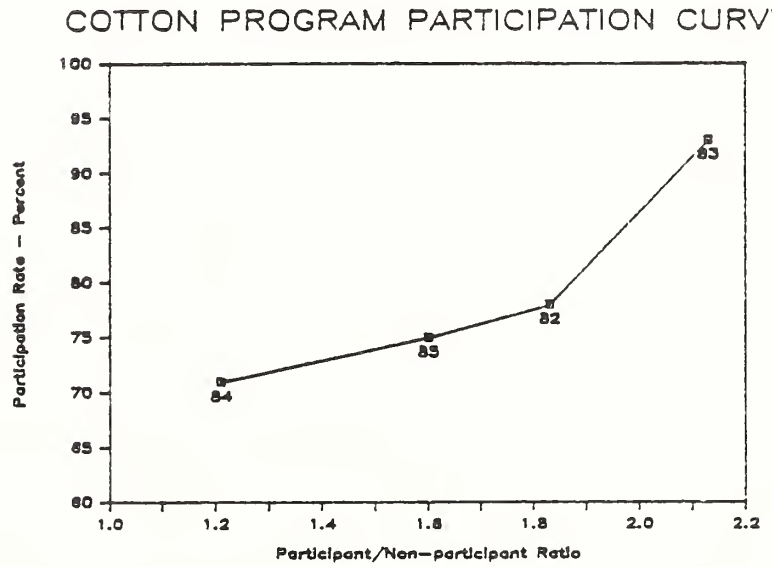


FIGURE 3



WORLD COTTON AND TEXTILE OUTLOOK

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OUTLOOK '85

Introduction

This brief paper does not propose to evaluate the excellent outlook reports presented by the USDA's FAS and ERS. Even though I may present a slightly different set of numbers, any differences with USDA forecasts are easily resolved if one is aware of the various crop-year definitions used, the way non-mill consumption is estimated, etc. In this paper, emphasis is placed on the world perspective and on textiles rather than on the U.S. outlook.

WORLD COTTON OUTLOOK

Although both world cotton production and consumption will set new records this season, production will exceed consumption by about 11 million bales. As a consequence, end-season carryover stocks will be up sharply--exceeding 34 million bales, or about 10 millions more than on August 1, 1984. This will be equivalent to 5.8 months' consumption requirements at the anticipated rate of offtake. Reacting to the emerging statistical situation, cotton prices have declined noticeably during recent months.

The main increase in stocks will occur in the socialist countries--mainly in the People's Republic of China (6.4 million bales)--and in the United States (1.7 millions). Gains are also expected in the other net exporting countries in the aggregate, as well as in net importing countries where total carryover at the start of the current season was the lowest in many years.

With excellent growing conditions reported in many countries, the estimate of world cotton production has been raised progressively to around 81.5 million bales against the 1983/84 harvest of 67.2 millions.

Most of the increase in production over the years has typically come from improved yields, but this season area is up by some 5 million acres, to nearly 84 millions--the highest since the early Fifties. Plantings have expanded in many countries in response to attractive prices of cotton, and tight cotton supplies last season. Also, official policies in a number of countries stimulated cotton growing. Average yield is placed at an all-time high of 466 pounds per acre compared to 410 pounds last season, and this increase in yield accounts for around two-thirds of the production gain. Among large producing countries, sharpest gains in yield during recent years have taken place in the PRC and the United States.

This season, most of the increase in production will be in the PRC and the United States, but significant gains are also anticipated in Pakistan, Brazil, Colombia,India and Egypt--where output was down drastically last season--and smaller gains in the USSR, Mexico, Turkey, Greece, Australia, Peru, and Spain.

In the USSR, despite delays in sowings and very hot weather in some areas, output is expected to total 12.45 million bales, some 200,000 bales more than in 1983/84. Production in the People's Republic of China is now thought to be at least 4 million bales over last season's. Area is up by around 5%, but most of the output gain comes from higher yields. The PRC now accounts for 31% of world cotton production compared to 18% ten years ago, and has become a net exporter of raw cotton. Cotton consumption in the PRC represents around one-fourth of world total, and exports of textile goods have expanded considerably over the years. The PRC formally joined the MFA in December, 1983.

World cotton supplies this season are likely to total 105.6 million bales--a new peak and up some 12 millions from the 1983/84 level--with the substantial gain in production far outweighing the 2 million bale reduction in the beginning season carryover stocks.

World cotton consumption is forecast to go up by around 1.2 million bales, to an all-time high of 70.6 millions. Global cotton use during the past two decades grew by an annual average of around one million bales, and the same is true of the 1980's so far despite the recession-related setback of 1981/82. Much of the increase is in the socialist countries, particularly the PRC. In the developing countries, cotton use continues to expand but at a slower rate. Consumption in the developed countries has stabilized during recent years.

This season,a substantial increase is foreseen in cotton consumption in Pakistan, around 200,000 bales, reflecting a recovery in textile activity from last season's unusually low level. Smaller gains are expected in the Republic of Korea, Japan, Turkey, India, and the USSR, with consumption rising in each case by between 50,000 and 100,000 bales.

At the same time, cotton use is likely to decline in some countries, particularly in the United States. There, domestic textile manufacturing is affected, among other things, by increased imports. Cotton consumption in 1984/85 is put at 5.5 million bales, off around 300,000 bales.

Consumption in the Far East is expected to increase in all cases except for Hong Kong, where textile capacity has shrunk considerably during recent years. However, recent events indicate that the increase in cotton utilization in the PRC will be limited somewhat, and increase by only 400,000 over the 1983/84 level of 17.4 million bales. Production of pure cotton textiles declined in the first 7 months of 1984, and consumer preference has shifted toward synthetics and blended textiles. Also, export prospects for textile products do not appear as promising as anticipated earlier in the season. It had been previously assumed that a sizable increase would again occur in line with the steady expansion in mill activity during recent years and sharply higher cotton availabilities.

Since textile output is increasingly dependent on exports in many Asian countries, restrictions in import markets and keen competition from other exporters affect mill consumption in these countries. A similar situation obtains with respect to Africa and South America; i.e., domestic cotton use is affected by trade restrictions.

Nevertheless, modest gains in cotton consumption are anticipated by most countries in both regions.

In Western Europe, with a majority of countries expecting some increase, aggregate cotton use is estimated at 6.25 million bales compared to 6.10 millions last season.

International cotton trade is expected to show a small increase from last season's volume of roughly 19.5 million bales. Even though world cotton consumption is forecast to rise noticeably, the increase is mainly in cotton producing countries which import little cotton. Present indications are that imports will be up both in the Far East and Western Europe, but will show little change in Eastern Europe. These gains, however, will be largely offset by reductions in purchases by net exporting countries. Thus, Pakistan, which was forced to import some 300,000 bales of cotton last season because of the crop setback, is not expected to be a buyer in 1984/85. Also, imports by the PRC and the USSR are likely to go down significantly.

Looking from the export side, global availabilities are up considerably. Shipments from Pakistan and Brazil will rebound sharply from last season's abnormally low levels. Cotton trade should also benefit from appreciably higher supplies in the PRC, the USSR, Mexico, Colombia, Peru, and Turkey. Conversely, shipments from the United States are likely to be affected by increased availabilities in other exporting countries, and the present strength of the dollar. Exports from the United States are officially estimated at 6.1 million bales against 6.8 millions in 1983/84.

During 1983/84 cotton exports from the PRC amounted to over 1 million bales. Export destinations were:

Bangladesh (32,000 bales)	Japan (93,000 bales)
Indonesia (38,000 bales)	Republic of Korea (14,000 bales)
Thailand (74,000 bales)	Hong Kong (423,000 bales)
Federal Republic of Germany (12,000 bales)	Eastern Europe (345,000 bales-est.)

Exports from the PRC for 1984/85 should increase from the 1983/84 figure since:

* export availability is greatly increased over 1983/84.

* first-time imports during 1983/84 by selected countries such as Bangladesh, Indonesia, the Federal Republic of Germany, and the Republic of Korea were primarily to evaluate spinning and weaving characterisitics of the Chinese cotton, and consequently should increase during 1984/85.

* limited Russian supplies indicate that the PRC may be able to at least maintain the estimated 1983/84 level of exports to Eastern Europe.

* the trade infrasructure--transportation, storage, ginning and pressing, etc.--is being improved by the authorities.

Prices of cotton have declined significantly during recent months, mainly because of the large increase in 1984/85 global output. The Cotton Outlook Index for Middling 1-3/32" quality, CIF North Europe, declined further this season, reaching 72.7 cents per pound in early October from the July 1984 average of some 79 cents. There was some upward movement during the second half of October on news of possible crop damage in the United States. The Index was around 75 cents per pound in the third week of October. However, the recovery was short-lived and, with the weather improving in the United States and the increase in production in the PRC, the Index reached 72.2 cents per pound by November 13th.

On the New York Cotton Exchange, the October contract went off the board at some 64-1/2 cents on October 9, close to the floor provided by the U.S. price support program loan rate of 55 cents per pound plus a cost of 6 to 7 cents to deliver cotton. Also, the farmer usually looks for some equity when his cotton is redeemed.

The gap between Index "A" and Index "B", which is for coarse counts, narrowed considerably last season, owing to the acute shortage of medium staple cottons. However, this gap has widened this season due to the larger output of the U.S. and Pakistani cotton crops used for coarse yarns, and PRC offerings in the export market of similar type cottons.

WORLD TEXTILE SITUATION

Yarn and Fabric Production

World cotton yarn and fabric production each rose by 2% in 1983 to set new records. Global cotton yarn production reached an all-time high 13.1 million tons. The largest increase occurred in the developing countries, particularly in Asia, in response to a recovery in both domestic and export demand. In the developed countries, also, aggregate cotton yarn production increased mostly on account of gains in the U.S., the Federal Republic of Germany, and Greece. However, production in Japan fell due to the continuation of the production curtailment scheme.

In the socialist countries, cotton yarn output declined reflecting largely the situation in the PRC, where production fell for the first time in recent years. In the USSR, however, production recovered to a record 1.7 million tons. Last year, the socialist countries accounted for over 44% of global cotton yarn production compared to 36% for the developing countries and 20% for the developed countries.

Cotton fabric production increased to 7.9 million tons. Increases took place in both the developing and the developed countries, but--as in the case of cotton yarn--production fell in the socialist countries, again mostly on account of lower output in the PRC. In the developed countries, the most significant gain occurred in the U.S. where output rose by 10% to 666,000 tons. Increases were also reported in Italy and the Federal Republic of Germany. Among the developing countries, cotton fabric output rose noticeably in India, Turkey, Hong Kong, and Argentina.

World trade in textile products (textiles and apparel) increased in 1983. The recovery from the recession was led by a significant increase in demand from the developed countries where, by value, imports rose by

18% to a new record. Imports into the EEC were up by 8%, mainly because of intra-developed countries' trade.

Last year, there was an increase of 5% in exports of textile products and fibers from the Far East, including Japan. Exports from the People's Republic of China increased further to both developed and developing countries. Many developing countries--in Latin America, for example--intensified their export drives to reduce their payments deficits.

Product-wise, apparel exports grew faster than textile's (yarns and fabric). Cotton takes a major share of world exports of textile products, particularly from the major cotton producing countries. However, developed countries continued to dominate trade in man-made fiber textiles, particularly in the higher qualities. Nevertheless, many developing countries and the socialist countries are increasing their exports of blended and man-made fiber products. In countries like the Republic of Korea and China (Taiwan) exports are now mainly man-made fiber textiles or blends.

Developed countries are leading exporters of textiles, and importers of both textiles and apparel. Their exports of textiles and apparel accounted for 60% and 38%, respectively, of the world total in 1982. Imports accounted for 57% and 75%. Although trade with developing countries expanded significantly in recent years, particularly in apparel, intra-developed countries' trade still predominates.

By value, in 1983 U.S. imports of textile products rose by 18% while exports declined by 15%. The trade deficit in these products jumped by a third to a record of $10.6 billion.

The deficit increased by 60% during the first 7 months of 1984, to $12.5 billion. During January-September 1984, imports of textile products reached a record 7,748.6 million yard equivalent, or 41% above the corresponding period a year ago. The strength of the U.S. dollar has increased the competitiveness of foreign goods. Hong Kong, China (Taiwan), the Republic of Korea, the EEC, the PRC, and Japan are the major suppliers of textile products to the U.S. Product-wise, apparel represented three-fourths of total U.S. imports of textile products followed by fabrics and yarn, including non-apparel items. In contrast, fabrics and yarn, including non-apparel items, constituted the major portion of U.S. exports. The leading export markets were the EEC, Canada, Japan, and the OPEC countries.

In 1983, 52% of imports of textile products were made of cotton and 41% of man-made fibers. Last year, imported textile products further expanded their share of the U.S. retail market to 16% of total domestic consumption of all fibers compared to only 8.4 % a decade ago. Two-thirds of U.S. exports are manufactured from MMF's.

In December 1983, the U.S. adopted new measures for tighter controls over textile and apparel imports. These were protested by various exporting countries as well as by the retail trade in the U.S. Increased quota restrictions under the new measures resulted in a surge for import items not covered by the Multi-fiber Arrangement, and from countries not subject to quotas or with under-utilized quotas. The U.S. also issued new country-of-origin regulations which went into full effect as of November 1 on shipments ordered by American buyers after August 3.

Western European trade in textile products by value increased significantly in 1983. In the EEC, imports of textiles and apparel increased in 1983 by 7 and 9%, respectively. Exports of textiles expanded by 9% but apparel exports declined by 10%. The trade surplus

was up in textiles while the deficit in apparel trade rose sharply. In response to changes in market conditions and increased competition from lower cost producers, domestic textile and apparel industries in the EEC countries continue to restructure and consolidate their operations.

Exports of cotton fabrics also went up last season, with the developed countries and Hong Kong again being the leading importers. The EEC was the largest market. In 1983, EEC imports rose by 5% from a year earlier to slightly under half a million tons. Major suppliers included the PRC, Pakistan, the U.S., and Switzerland. In recent years, Turkey and Brazil have expanded their exports to the Community significantly while India and Hong Kong registered a decline. Imports into the U.S. increased from 121,000 to 157,000 tons last year. The PRC, together with China (Taiwan) and Hong Kong, accounted for over half of the U.S. imports. Hong Kong's imports of cotton fabrics reached a peak of 121,000 tons in 1983. In contrast, cotton fabric imports into Japan declined to 43,000 tons due to slack conditions in the domestic market. The PRC accounted for 61% of Hong Kong's imports and for over three-fourths of Japanese imports.

International trade in cotton yarn also increased in 1983. The EEC countries, Hong Kong and Japan, are the leading importers of cotton yarn. Compared to 1982, imports into the EEC rose by 11% to 380,000 tons, and into Hong Kong by 29% to 174,000 tons. In recent years, Turkey and Brazil accounted for over half of the EEC imports while the Republic of Korea and Pakistan supplied over 90% of Japanese imports. Hong Kong is becoming increasingly dependent on the PRC for cotton yarn imports, but China (Taiwan), the Republic of Korea, and Pakistan are also major suppliers. Other large global exporters of cotton yarn include Egypt and Greece.

Inter-fiber Competition

Inter-fiber competition is expected to intensify. The man-made fiber industry recovered in 1983, with output rising by 8% from the preceding year's level. The share of MMF's in global consumption of all fibers was about 46% against 45% in 1982 and 47% in 1981. Major producers of man-made fibers have for some time been engaged in restructuring programs--encompassing cutbacks in capacity, modernization of plants, concentration on profitable products, and streamlining of operations. As a result of these measures, together with higher prices of many fibers, profitability improved during 1983, and the MMF industry is now stepping up its technical research and promotion.

However, the MMF industry in the United States, Western Europe, and Japan reported a noticeable slowdown during recent months. This was reflected in lower operating rates and reduced earnings during the third quarter of 1984. In the U.S., average operating rate for MMF producers was down by one percentage point in September to 77.3 percent. This compared with 85.4 percent in September last year. This decline is due, at least in part, to the growth of MMF imports into the United States--which, during the first 7 months of 1984, rose by 78% from the comparable 1983 period to 154.4 million pounds. The strength of the dollar against European currencies facilitates European MMF exports to the United States.

This is the first time since 1973 that the U.S. has experienced a trade deficit for man-made fibers and MMF manufactures. The situation

has been caused by declining exports of both man-made fibers and MMF manufactures and greatly increased imports of garments.

The balance of trade in MMF's showed a net import balance for the first 6 months of 1984 of 55 million pounds, compared with a net export balance of 92 million pounds for the first 6 months of 1983, and a net import balance of 85 million pounds for the second half of 1983.

Latest plans for production capacity of man-made fibers indicate an annual increase of 3.6 percent during 1984/85. The gain will again be concentrated in the developing, and socialist countries--of around 7 percent and 8 percent, respectively. By contrast, capacity is projected to decline further in Western Europe, remain unchanged in Japan, and show a slight increase in the United States. In the developed countries as a group, production capacity has declined steadily in recent years, but they still account for well over half of the world total.

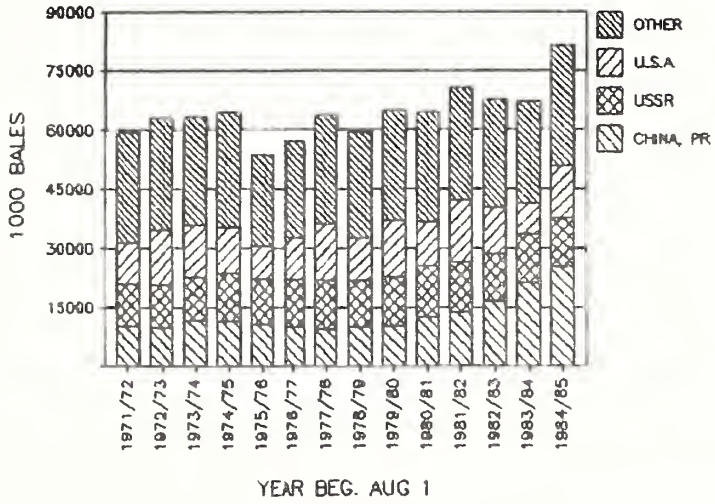
Prices of man-made fibers have eased somewhat in recent months. In the United States, polyester staple prices dropped from 79 to 77 cents per pound around the middle of September and were about 81 cents during the first half of 1984. Quotations for polyester staple in China (Taiwan) declined in early November by around 1.5 cents per pound to some 60 cents.

TABLE 1. WORLD COTTON SUPPLY AND DISTRIBUTION

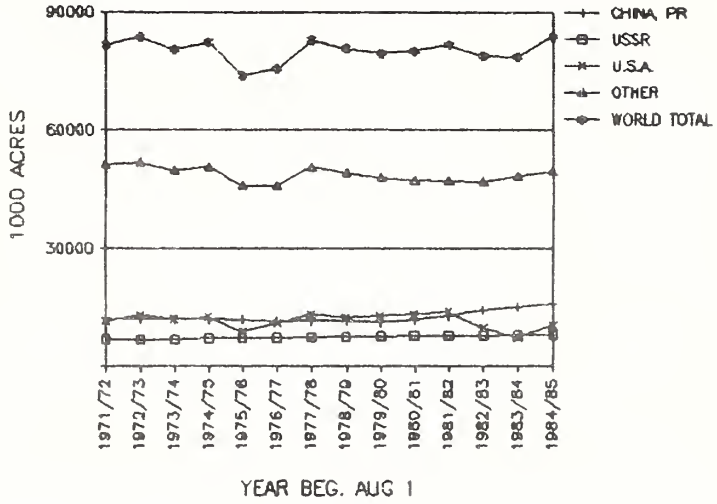
COUNTRY	YEAR BEGINNING AUGUST 1						
	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85 PREL.	1985/86 PROJ.
	MILLION BALES						
STOCKS, AUGUST 1						1/	
UNITED STATES	3.96	3.00	2.67	6.63	7.94	2.71	4.39
OTHER NET EXPORTERS	9.77	8.69	7.95	9.30	7.74	6.67	7.18
NET IMPORTERS	4.53	5.49	4.47	4.46	4.23	4.41	5.38 2/
SUB-TOTAL	18.26	17.18	15.09	20.39	19.90	13.79	16.95
CHINA, P.R.	1.48	2.21	3.02	2.74	3.37	6.49	12.84
U.S.S.R.	2.24	2.07	2.16	1.91	2.03	2.89	3.29
OTHER SOCIALIST	.87	1.05	.83	1.02	.86	.98	1.10
SUB-TOTAL	4.59	5.32	6.02	5.68	6.27	10.36	17.23
WORLD TOTAL	22.85	22.50	21.10	26.06	26.17	24.15	34.18
PRODUCTION							
UNITED STATES	14.63	11.12	15.64	11.96	7.77	13.27	
ELSEWHERE	27.67	27.72	28.44	27.00	25.79	30.33	
SUB-TOTAL	42.30	38.84	44.08	38.96	33.56	43.60	
CHINA, P.R.	10.16	12.43	13.63	16.53	21.30	25.30	
U.S.S.R.	12.41	13.17	12.98	11.95	12.28	12.45	
OTHER SOCIALIST	.07	.09	.08	.08	.08	.08	
SUB-TOTAL	22.64	25.68	26.69	28.56	33.66	37.83	
WORLD TOTAL	64.94	64.53	70.77	67.52	67.22	81.43	
STOCKS PLUS PRODUCTION							
UNITED STATES	18.59	14.12	18.31	18.60	15.71	15.98	
ELSEWHERE	41.97	41.90	40.85	40.75	37.75	41.41	
SUB-TOTAL	60.56	56.02	59.16	59.35	53.46	57.39	
CHINA, P.R.	11.64	14.64	16.66	19.27	24.67	31.79	
U.S.S.R.	14.65	15.23	15.13	13.86	14.31	15.34	
OTHER SOCIALIST	.94	1.13	.91	1.10	.94	1.06	
SUB-TOTAL	27.23	31.00	32.70	34.23	39.93	48.19	
WORLD TOTAL	87.79	87.03	91.87	93.58	93.39	105.58	
CONSUMPTION							
UNITED STATES	6.50	5.89	5.26	5.50	5.89	5.50	
ELSEWHERE	33.13	32.97	32.27	33.38	33.84	34.97	
SUB-TOTAL	39.63	38.86	37.53	38.88	39.73	40.47	
CHINA, P.R.	13.56	15.08	16.09	16.81	17.40	17.80	
U.S.S.R.	8.92	8.97	8.98	9.04	9.10	9.15	
OTHER SOCIALIST	3.21	3.15	3.17	3.14	3.17	3.19	
SUB-TOTAL	25.69	27.20	28.25	28.99	29.67	30.14	
WORLD TOTAL	65.32	66.06	65.78	67.87	69.40	70.61	

1/ 1984/85 BEGINNING STOCKS ARE ADJUSTED DOWNWARD BY 200,000 BALES BASED ON OFFICIAL STOCK FIGURES RELEASED BY THE U.S. DEPARTMENT OF COMMERCE.
2/ INDIA SHIFTED FROM NET EXPORTER TO NET IMPORTER FOR THE 1984/85 SEASON.

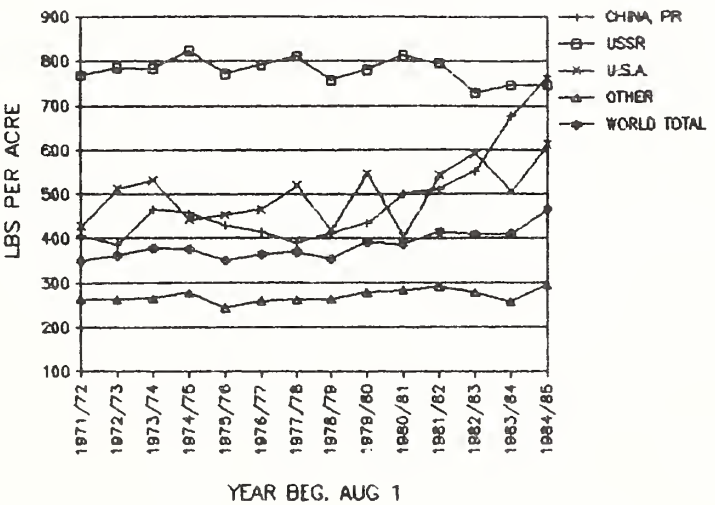
WORLD COTTON PRODUCTION



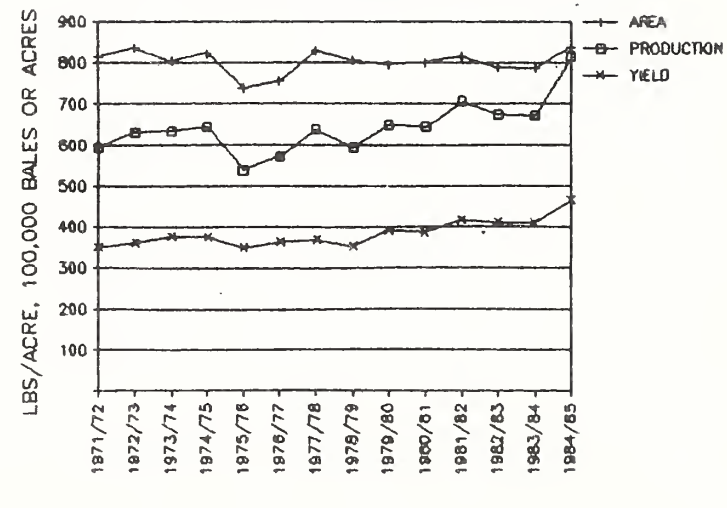
WORLD COTTON AREA



WORLD COTTON YIELD

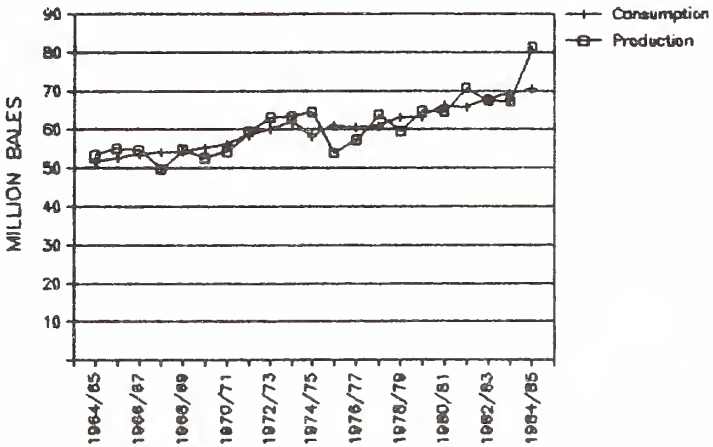


WORLD AREA, PRODUCTION, AND YIELD



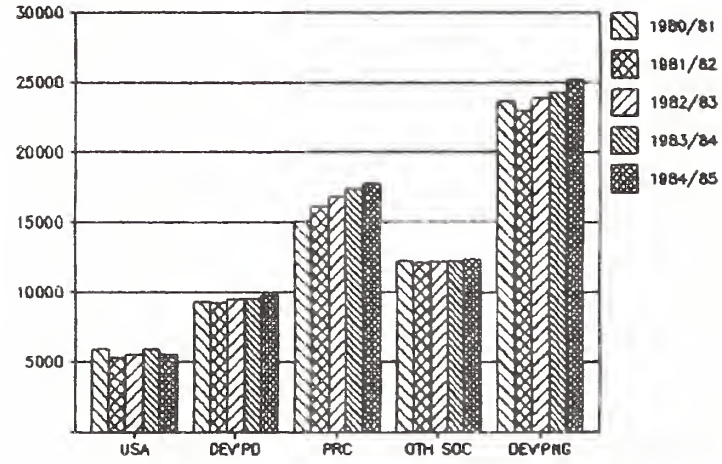
PRODUCTION, CONSUMPTION AND STOCKS

(Year Beginning Aug 1)



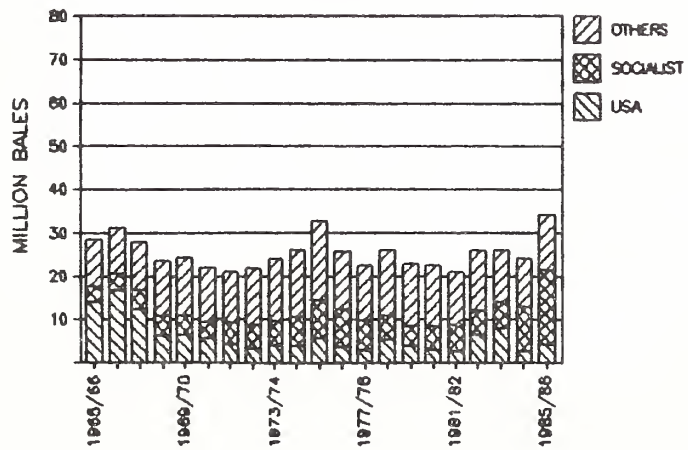
Cotton Consumption by Crop Year

1,000 480-lb. bales



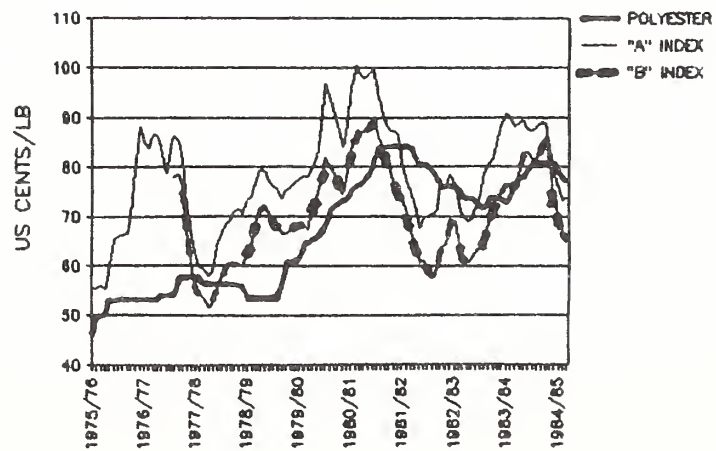
STOCKS OF COTTON

(Year Beginning Aug 1)

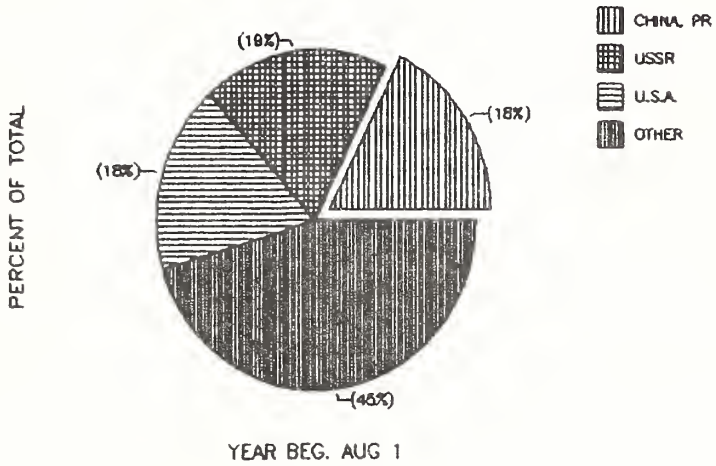


UPLAND COTTON PRICES

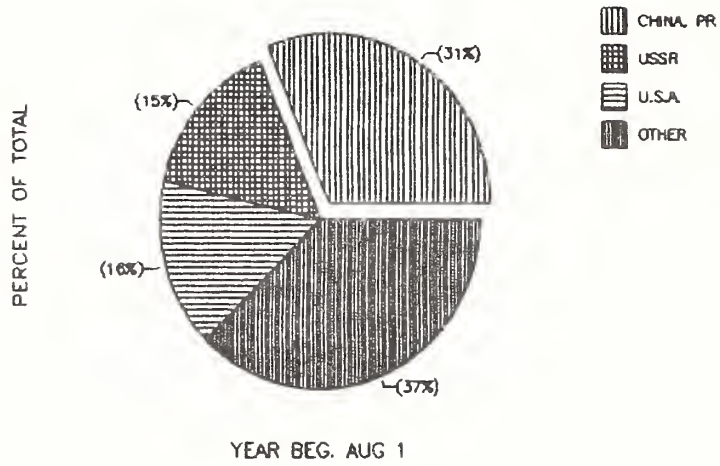
CIF N. EUROPE



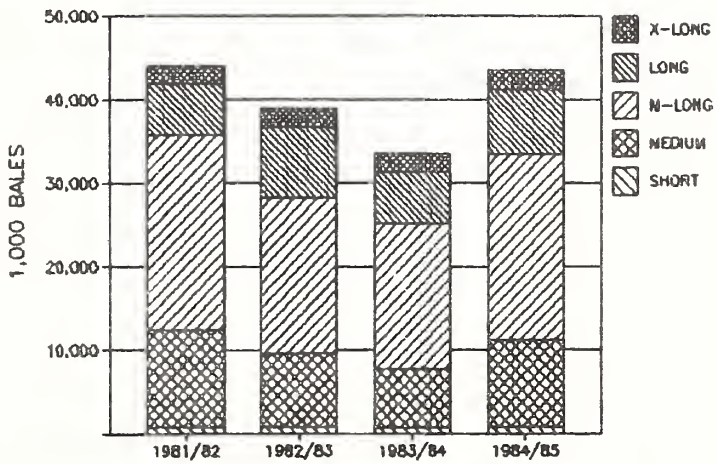
WORLD COTTON PRODUCTION
1974/75



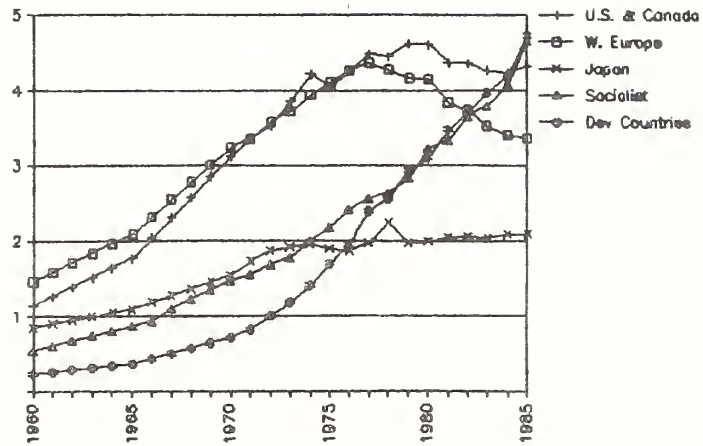
WORLD COTTON PRODUCTION
1984/85



WORLD COTTON PRODUCTION BY STAPLE LENGTH
(Non-Socialist)

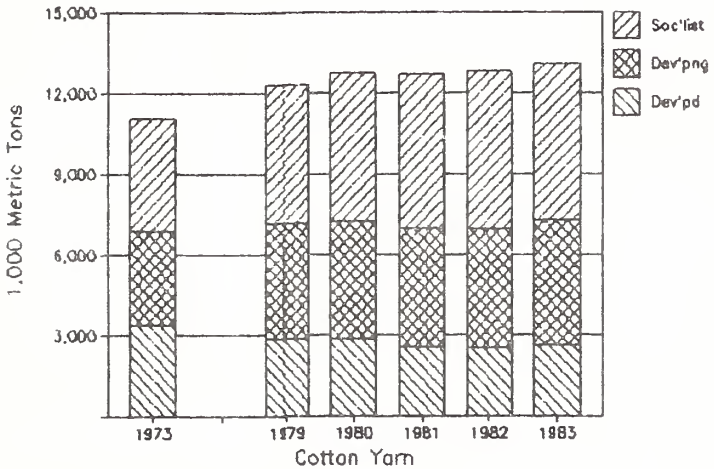


PRODUCTION CAPACITY FOR MMF's
Million Metric Tons



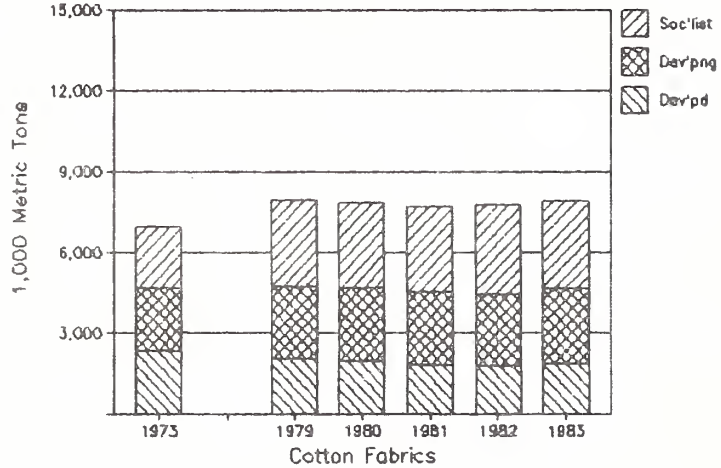
EST. PRDN. OF COTTON YARN AND FABRICS

By Region, 1973 and 1979–1983



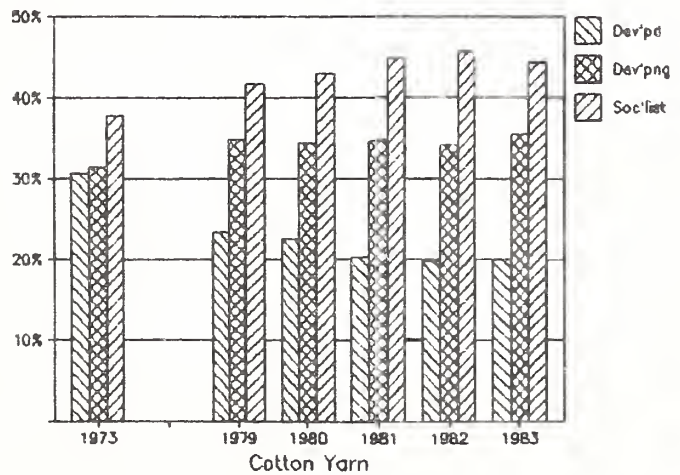
EST. PRDN. OF COTTON YARN AND FABRICS

By Region, 1973 and 1979–1983



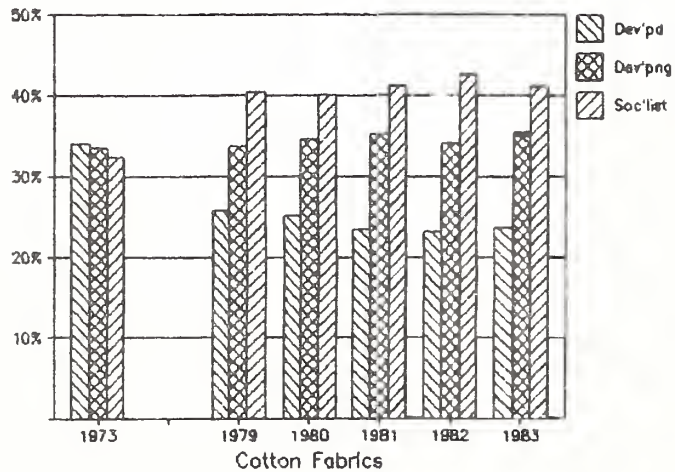
EST. PRDN. OF COTTON YARN AND FABRICS

Share of Total Production by Region



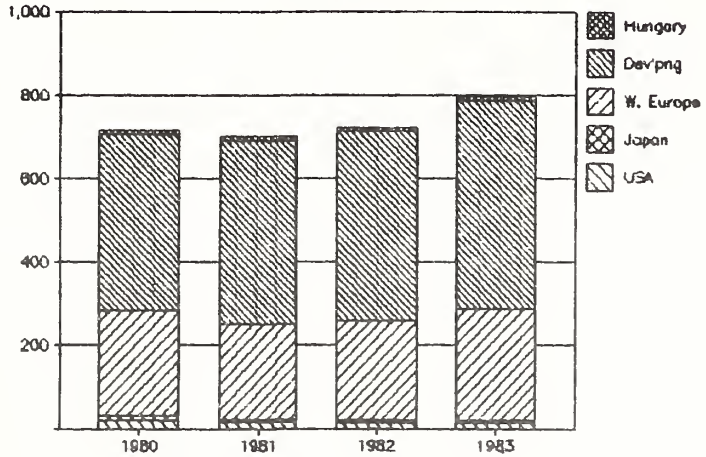
EST. PRDN. OF COTTON YARN AND FABRICS

Share of Total Production by Region



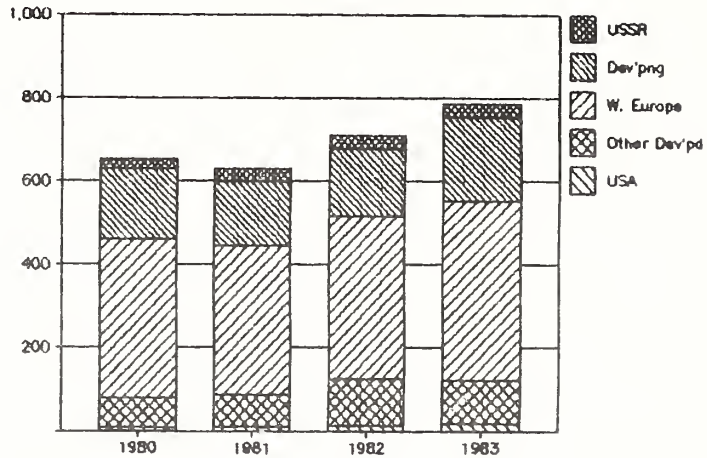
COTTON YARN EXPORTS 1980–1983

1,000 Metric tons



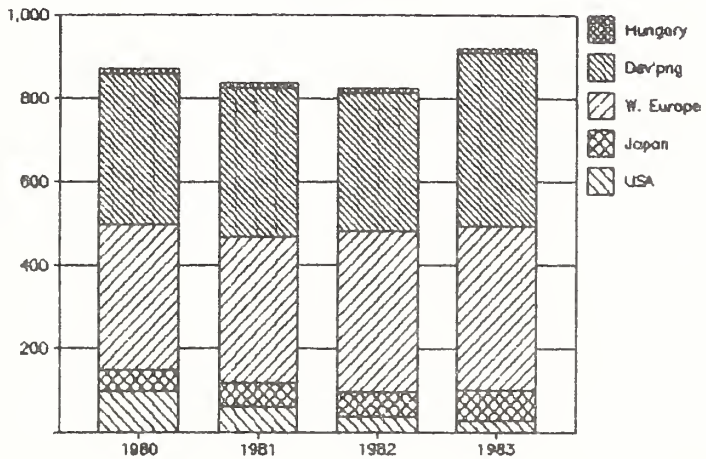
COTTON YARN IMPORTS 1980–1983

1,000 Metric tons



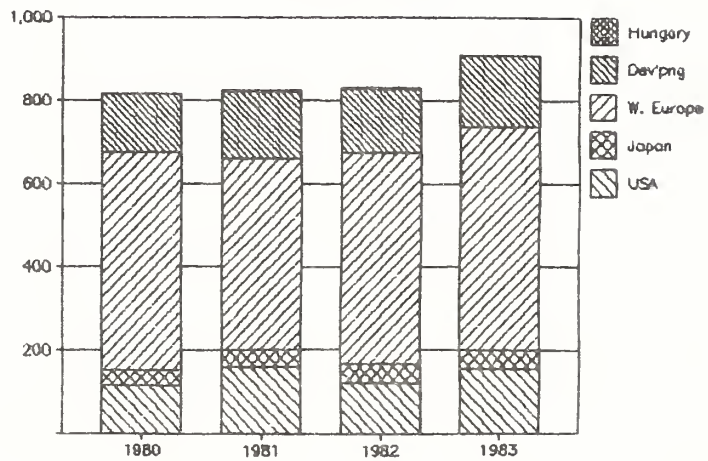
COTTON FABRIC EXPORTS 1980–1983

1,000 Metric tons



COTTON FABRIC IMPORTS 1980–1983

1,000 Metric tons



DIETARY GUIDELINES REVISION

Bernard S. Schweigert
Chairman, Department of Food Science and Technology
University of California, Davis

Annual Agricultural Outlook Conference
Session #31, Washington, DC

For Release: Wednesday, December 5, 1984

A scientific advisory committee, jointly sponsored by the U.S. Department of Agriculture (USDA) and the Department of Health and Human Services (HHS), was appointed in the spring of 1983. The composition of the committee at the time of their appointment was as follows:

Henry Kamin
Department of Biochemistry
Duke University, Durham, NC

David Kritchevsky
Wistar Institute
Philadelphia, PA

Robert Levy
College of Physicians and Surgeons
Columbia University, NY

Sanford Miller
Bureau of Foods, FDA
Washington, DC

Robert E. Olson
School of Medicine
University of Pittsburgh, PA

Lester Salans
Department of HHS
Washington, DC

Bernard S. Schweigert
Department of Food Science and Technology
Univ. of California, Davis, CA

Frederick Stare
Department of Nutrition
Harvard University, Boston, MA

Judith Stern
Department of Nutrition
Univ. of California, Davis, CA

The meetings of the committee have been held in July and December of 1983, and May of 1984. A final meeting of the committee is planned for December 19, 1984. The charge of the committee was essentially twofold:

1. To review the latest scientific information to ascertain if any revisions, additions or changes were appropriate for the Dietary Guidelines, which was published in 1980.

2. To review comments submitted by individuals since the publication was prepared to ascertain if any modifications were appropriate based on the comments received to date.

At the three meetings that have been held, each of the Dietary Guidelines was reviewed in view of these twofold charges to the committee. At the conclusion of the December 1983 meeting, subcommittees were appointed to develop draft statements of each guideline for review and revisions by all members of the committee at the meeting held in May 1984. After further review, we anticipate developing a draft of our final report at the meeting scheduled for December 19, 1984. On the basis of the literature reviewed to date and the comments submitted by interested individuals, it is anticipated that relatively minor changes will be recommended for most of the seven guidelines.

DIETARY GUIDELINES FOR AMERICANS

1. Eat a Variety of Foods
2. Maintain Ideal Weight
3. Avoid Too Much Fat, Saturated Fat, and Cholesterol
4. Eat Foods with Adequate Starch and Fiber
5. Avoid Too Much Sugar
6. Avoid Too Much Sodium
7. If You Drink Alcohol, Do So in Moderation

Reference: Nutrition and Your Health, Dietary Guidelines for Americans, USDA/HHS, Home and Garden Bulletin No. 232 (1980).

The data appear to be the least conclusive with respect to guideline #3: Avoid Too Much Fat, Saturated Fat, and Cholesterol. This has been receiving the primary attention for the committee prior to the December 1984 meeting.

We expect to finalize the committee report and the specific recommendations the committee will have for any modifications in the seven guidelines, including the possibility of combining some of them or even proposing new or supplemental guidelines.

Prior to the meeting, the committee will be reviewing all data available and will be exchanging views on the advice we will provide to the two federal agencies.

The committee has noted the great interest in these guidelines and the value this publication has had for use by interested professionals, including Cooperative Extension personnel throughout the United States. It may well be the most widely used publication relative to providing dietary guidelines to Americans. An important background paper on the Dietary Guidelines has been published in Food Technology in July, 1984 (Dietary Guidelines: The USDA Perspective, Food Technology, Volume 38 (issue 7, p. 80-86), 80, 1984, by Isabel D. Wolf and Betty B. Peterkin.

It is a challenge to balance providing advice which is not so general that it has limited use, with being too specific and implying benefits that scientifically we are not in a position to deliver with a high degree of certainty.

A NEW DIMENSION TO NUTRITION MONITORING: USDA'S CONTINUING SURVEY OF FOOD INTAKES BY INDIVIDUALS

Robert L. Rizek and Linda P. Posati; Nutrition Monitoring Division, Human Nutrition Information Service, USDA

Annual Agricultural Outlook Conference
Session #31, Washington, DC
For Release: Wednesday, December 5, 1984

The U.S. Department of Agriculture (USDA) and the U.S. Department of Health and Human Services (DHHS) provided to Congress in 1981 a joint implementation plan for a comprehensive National Nutrition Monitoring System (NNMS). The system is an assortment of interconnected activities designed to provide information about nutrition, its role in the health of the American people, and factors that are expected to affect nutrition. Some of the activities included in the plan had been a part of USDA and DHHS programs for some time; others were added sequentially to round out the system. These activities cover the following elements: Health status measurements; food consumption measurements; food composition measurements; dietary knowledge and attitudes assessment; and food supply determinations. The system also incorporates research activities in support of nutrition monitoring, such as methodology studies and development of standards. The development and implementation of the system has been encouraged by the two Departments--USDA and DHHS, by the Congress--especially the Committee on Science and Technology of the House of Representatives, by the scientific community, and by groups that use the data for a wide range of purposes.

The goals of the NNMS, as set forth in the joint implementation plan, are as follows:

- To provide the scientific foundation for the maintenance and improvement of the nutritional status of the U.S. population and of the nutritional quality and healthfulness of the national food supply.

- To collect, analyze, and disseminate timely data on: The nutritional and dietary status of the U.S. population; the nutritional quality of the food supply; food consumption patterns; and consumer knowledge and attitudes concerning nutrition.

- To identify high-risk groups and geographic areas, as well as nutrition-related problems and trends, in order to facilitate prompt implementation of nutrition intervention activities.

- To establish national baseline data and develop and improve uniform standard methods, criteria, policies, and procedures for nutrition monitoring.

- To provide data for evaluation of the implications of changes in agricultural policy related to food production, processing, and distribution which may affect the nutritional quality and healthfulness of the U.S. food supply.

Primary nutrition monitoring activities are assessments of nutritional and dietary status through surveys that are conducted nationwide. Two existing national surveys, the National Health and Nutrition Examination Survey (NHANES) and the Nationwide Food Consumption Survey (NFCS) serve as the foundation for making statements concerning the nutritional status of the American people. These two surveys are the major components of NNMS.

NHANES is conducted periodically by the National Center for Health Statistics of DHHS. NHANES consists of a series of surveys of representative samples of the U.S. population. The surveys include health histories, physical examinations, laboratory measurements, and 24-hour dietary recalls. Two surveys have been completed--NHANES I, conducted between 1971 and 1974, and NHANES II, conducted between 1976 and 1980. A Hispanic Health and Nutrition Examination Survey is under way.

The NFCS has been conducted at roughly 10-year intervals since 1935 by the Human Nutrition Information Service (HNIS) of USDA. The last NFCS was carried out on a national probability sample of U.S. households in 1977-78. This survey collected information on the food used at home by the entire household and on food eaten at home and away from home by individual household members. Included were the amounts and costs of foods used by households in terms of food as brought into the household during a 7-day period and the food actually consumed by individual members during a 3-day period. Also, data were collected on numerous socioeconomic variables, such as income and participation in food assistance programs.

In addition to these two major survey activities, a broad range of secondary monitoring activities and related research is carried out within USDA and DHHS. Within USDA, the Economic Research Service estimates annually the quantities of various foods that disappear into civilian consumption. HNIS uses these data to determine the nutrient content of the food supply and per capita levels of nutrients each year. HNIS also maintains the National Nutrient Data Bank which makes available data on the nutrient composition of foods. The Agricultural Research Service, in its five nutrition research centers, conducts basic research in human nutritional requirements, and its Nutrient Composition Laboratory develops new and improved methods for analysis of nutrients in foods.

Within DHHS, the Centers for Disease Control operate a nutrition surveillance system to collect information on the health status of pediatric and pregnant populations using public health facilities in certain States. The Food and Drug Administration, in its Total Diet Study, determines levels of important minerals and contaminants in diets selected according to current consumption patterns from urban sites across the country. Other DHHS activities include determination of morbidity and mortality statistics and surveys to measure knowledge, attitudes, and practices about food and nutrition. Both USDA and DHHS conduct research on methods and standards for nutritional assessment.

The joint implementation plan covers major monitoring activities through 1987. It sets forth four major objectives to ensure that data collected from the component surveys and research activities can be integrated to provide a timely and comprehensive view of food practices, trends, and health implications. These objectives are as follows: Achievement of the best possible coordination of the NFCS and NHANES to broaden the range of comparable information they provide; development of a reporting system to translate findings from these two surveys and other Federal monitoring efforts into periodic reports to Congress; conducting a longitudinal survey of dietary intakes of individuals in 1985; and conducting a coordinated NFCS-NHANES in 1987.

Our work to achieve these objectives is progressing well. Major steps undertaken by USDA and DHHS since 1981 to implement NNMS include the following:

- Purposes and procedures of NFCS and NHANES were reviewed by a committee of statisticians and sampling experts, and their recommendations to promote comparability are being implemented.

- Dietary data users conferences were held by the Food and Nutrition Board of the National Academy of Sciences (FNB/NAS) under a USDA/DHHS grant in 1983. Through these conferences and an FNB committee, priority uses of dietary data were identified and new and more effective means of obtaining needed data were recommended. The FNB report recommendations are being implemented.

- The USDA/DHHS Joint Nutrition Monitoring Evaluation Committee was convened. Their report on the nutritional status of the U.S. population and recommendations for improvement of NNMS is well under way and will be sent to Congress next year.

- The risks associated with nutrient intakes that fall below the FNB/NAS Recommended Dietary Allowances are being studied by an FNB-appointed committee of experts under a USDA grant. This study, needed for proper interpretation of USDA/DHHS survey results, will be completed in March 1985.

- Two major methodological studies were conducted (1) to develop procedures for collecting food intakes from individuals for up to 12 days over a year and (2) to test procedures with selected segments of the low-income population. These studies identified the best procedures to be used in a new continuing survey.

- Additional research in survey methodology to improve NNMS has been conducted at eight universities with USDA funding, and results are being incorporated into HNIS survey procedures.

A major thrust of USDA's monitoring efforts is the initiation of the Continuing Survey of Food Intakes by Individuals in April 1985, as called for in the joint implementation plan. It is the first nationwide dietary survey to be conducted year-by-year in this country. It will complement the NFCS. The objective of this survey is to measure the

food and nutrient content of U.S. diets over time, signal changes taking place, and provide certain other information pertinent to evaluations of nutritional status. This survey will provide continuous data on the dietary adequacy of the general population and selected population subgroups who may be at high nutritional risk.

The ability to observe trends and forecast potential nutritional problems will allow policymakers to formulate sound policies and programs with respect to agriculture, food assistance, nutrition education, food fortification, and so forth. Continuous, up-to-date information on food consumption practices and dietary adequacy of the population will improve nutritional responses to economic change, health promotions, and other factors affecting food intake.

The Continuing Survey is responsive to recommendations made by the President's Task Force on Food Assistance relative to steps that should be taken to improve information on the nutritional well-being of the American population. It also reflects the results of USDA methodological studies and the consensus of authorities from Government, academia, and industry who attended the FNB conference on priority needs of users of food consumption survey data. We worked closely with DHHS in developing the questionnaire and plans for data analysis to ensure maximum comparability with NHANES.

The initial Continuing Survey to start next April will consist of a core monitoring group--a nationally representative sample of women at all income levels who are 19 through 50 years of age and of all children of those women who are 1 through 5 years of age. The survey is expanded in scope this first year to include also a nationally representative sample of low-income women 19 through 50 years of age and of all children of those women who are 1 through 5 years of age.

Women of childbearing age were selected for the core sample as well as the low-income sample for several reasons. Generally they are the household food managers who know the most about the food eaten--how it is prepared and the kinds and amounts of ingredients. Also, they are among the sex-age categories that were found in the 1977-78 survey to have intakes that most often failed to provide recommended amounts of nutrients. Young children also had intakes that were often short in nutrients; their diets in these formative years are of special importance.

We will collect six 24-hour recalls of food intake for each respondent over a 1-year period in order to measure usual intake. The first day's intake will be collected by personal interview. Subsequent contacts every 2 months will be made by telephone, if possible, or by personal interview if the respondent has no phone. New and comparable samples of respondents will be selected each year for the core group. Supplemental groups, where diet quality is of concern, may be added, changed from year to year, or repeated under option provisions specified in the contract.

The 24-hour recalls will obtain data comparable to that obtained in the first of the 3 days of individual intake data collection in the 1977-78 NFCS. The data to be gathered will include the following:

- o A description of the food and beverages eaten at each occasion;
- o The quantity of each eaten, in common measures;
- o The source of the food--home supplies, school, etc.;
- o The eating occasion--breakfast, lunch, snack, etc.--the time it began and with whom the food was eaten, and
- o General questions about diet and health.

Individuals will be asked if the day's intake was typical and, if not, why. They will also be requested to give self-reported height and weight. The individuals will be asked if they are on a special diet and, if so, what kind. We will inquire if vitamin and/or mineral supplements are used and obtain a description of types. We will also obtain self-reported health status, including physical handicaps.

Additional information to be obtained in the Continuing Survey that was not included in the 1977-78 NFCS covers the following:

- o Whether or not fat was used in preparing the food eaten and, if so, the type of fat;
- o Whether or not salt was used in preparing the food before it was served;
- o The brand name of the food or beverage, if applicable;
- o The form of the food or beverage when it entered the home; i.e., frozen, canned, fresh, etc.;
- o The type of container/package the food/drink was in; i.e., metal, foil, glass, plastic, etc.;
- o Whether or not the respondent smokes; if so, what and how much, and
- o The usual level of physical activity in leisure time, as well as in place of employment, and/or in housework.

As in the 1977-78 NFCS, demographic and socioeconomic data will be obtained from each household. To be included are:

- o Education;
- o Employment--occupation and hours worked;
- o Household income and source of income;
- o Program participation; e.g., Food Stamp and WIC;
- o Self-evaluation of the adequacy of the household food and, if inadequate, why;
- o Usual amount spent for food at home, and
- o Usual amount spent for food bought and eaten away from home.

The nutrient data base used for estimating the nutrient intakes of individuals in the 1977-78 NFCS contained values for 14 nutrients and food energy. The nutrients were: Protein, fat, carbohydrate, calcium, iron, magnesium, phosphorous, vitamin A as international units, thiamin, riboflavin, niacin, vitamin B6, vitamin B12, and vitamin C.

Since 1977, our computerized National Nutrient Data Bank has become fully operational and the data it makes available have been expanded considerably. As a result, we are not only updating but also extending the data base for use with the Continuing Survey. It will include the following additional nutrients and dietary constituents that were not among the 14 included in the 1977-78 analysis:

- Sodium
- Potassium
- Zinc
- Copper
- Folacin
- Cholesterol
- Total saturated fatty acids
- Total monounsaturated fatty acids
- Total polyunsaturated fatty acids
- Vitamin A as retinol equivalents
- Carotene as retinol equivalents
- Vitamin E as alpha-tocopherol equivalents
- Dietary fiber
- Alcohol

The preparation of this greatly expanded nutrient data base is facilitated by a computerized linking system that HNIS has developed during the past several years. This system contains a large recipe file and permits rapid, automatic calculation of mixtures using USDA's Nutrient Data Base for Standard Reference as primary source of food composition values.

As our contractor makes final preparations to initiate data collection in April on the Continuing Survey, plans are under way for the more comprehensive decennial NFCS-1987. This will cover household food use and costs as well as 3-day intakes of individual household members. Current plans are to collect data from households of all incomes as well as from a supplemental sample of low-income households. The samples for the Continuing Survey, both the core monitoring group and the low-income group, will also be included in NFCS-1987.

The major change we foresee in NFCS-1987 is computerization of parts of the interview process. However, other changes may be initiated as we meet further with data users and analyze the results of the field test of the household phase that we are undertaking in 1985. All the plans for NFCS-1987, as for this Continuing Survey, are being made in close cooperation with NHANES staff.

The initiation of the Continuing Survey and our ability to expand and increase the quality and quantity of nutritional assessments of diets and to report results in a timely manner are sources of pride to HNIS staff. They bring together results of needs assessments, methods studies, and numerous analyses of the composition of foods over the past 5 years. The Continuing Survey is an exciting project that will yield extremely important data. It is a major activity in a series of well-planned sequential and systematic monitoring efforts. Its initiation, and other activities I've described, confirms USDA's commitment to implementation of a coordinated and comprehensive National Nutrition Monitoring System.

THE AMERICAN RED CROSS NUTRITION COURSE: AN OVERVIEW

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During the last four years, the United States Department of Agriculture's (USDA) Human Nutrition Information Service (HNIS) cooperated with the American National Red Cross (ARC) to develop and evaluate the effectiveness of a nutrition course for healthy American adults. The course is titled, "Better Eating for Better Health." This joint nutrition education research effort was initiated in 1980 as the result of a resolution by the ARC national convention in 1979 calling for the inclusion of nutrition in ARC's new health promotion initiatives.

Both USDA and ARC provided unique resources to the project. ARC has extensive experience in developing health education courses and materials and in providing health education to the public. In addition, ARC has over 3,000 chapters nationwide, providing a national network to deliver the nutrition course to the public. USDA has extensive experience in developing and providing nutrition guidance for the general healthy population. In addition, the USDA Extension Service has a national network of food and nutrition specialists who could serve as resources for Red Cross chapters as the course is implemented in communities throughout the United States.

A Memorandum of Understanding, signed in 1982, committed USDA and HNIS to provide technical assistance in developing the nutrition course, and to collaborate with ARC in testing and evaluating the course materials and teaching strategies. USDA's Extension Service agreed to assist in reviewing course materials and as resources permit, to encourage State and local Extension specialists to provide technical assistance, coordination and consultation to ARC chapters in delivery of the nutrition course in their communities.

From the beginning this project was a multidisciplinary effort. A project team composed of professionals from HNIS, ARC and Virginia Polytechnic Institute and State University (VPI) contributed to the development of the course. Together the project team represented expertise in nutrition science, nutrition education, health education and evaluation.[1]

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[1] Members of the project team for the development of "Better Eating for Better Health" were: Anne Shaw, USDA, Luise Light and Patricia Marsland, formerly with USDA; Rebecca Mullis and Kristen DeMicco, formerly with VPI; Barbara Clarke, Mary Ann Hankin, and Fred Troutman, ARC. Patricia Edwards, VPI, was the principal program evaluation consultant.

Purpose and Design

The purpose of the nutrition course, "Better Eating for Better Health," is to enable the consumer to make wise personal food decisions based on current concepts of nutrition for good health (1). The current nutrition concepts are primarily based on the Dietary Guidelines published by the U.S. Departments of Agriculture and Health and Human Services (2).

The target audience for this program is healthy American adults who are interested in improving their own nutrition and/or the nutrition of others for whom they select and prepare food.

Like other ARC health education courses, "Better Eating for Better Health" focuses on developing skills along with presenting information. Through a variety of activities and discussions the course provides opportunity for participants to evaluate their own food choices and to understand how these choices may affect their health. The course first presents nutrition concepts, and then assists participants in developing skills needed to apply the information to their personal food decisions.

Emphasis is given to information that will be useful to participants in making food decisions for a better diet. For example, nutrient composition of foods, food labeling, U.S. RDA's, and types of foods that contribute fat, sweeteners or sodium to diets, are discussed in detail because they relate directly to practical decisions when selecting foods. Participants are encouraged to try new food practices and share their experiences with others.

Course Content and Materials

The course is designed to be taught in six two-hour sessions. Course materials consist of an Instructor's Guide (1) and a Participant's packet (3). In the Instructor's Guide each session includes an overview of the session, objectives, key points, instructor's preparation for the session, course content, background information, and activities for each objective. The Participant's packet contains a Participant's Guide that provides background information on session topics, activity sheets, tables and other supplemental material. Six additional booklets deal with nutrition issues at specific stages of the life cycle. A poster of the Food Wheel summarizes some of the food guidance information presented in the course.

Topics covered by the course are those of interest to consumers and those important in making food decisions for improved nutrition. Topics include lifestyle and non-nutritional factors influencing individual eating decisions; major nutrients in foods; food labeling; food additives; dietary guidelines; food sources of fat, cholesterol, sodium, and caloric sweeteners; vitamin-mineral supplements; calorie balance and weight control; role of exercise in physical fitness; coping with varying nutrient needs and lifestyle factors influencing food choices at different stages of the life cycle; evaluation of popular diet plans and alternative eating styles.

Food Guidance System

An integral part of "Better Eating for Better Health" is the food guidance system based on the dietary guidelines. This food guidance system provides the framework for organizing the nutrition information in the course so that it can be applied to making food decisions. The food guidance system has multiple components that are presented in a sequential manner. First, emphasis is given to the consumption of a variety of foods to obtain needed nutrients. The importance of moderating fat, sweeteners, cholesterol, sodium and, if used, alcohol is then emphasized. Using supplementary information from tables and text and special activities, participants practice applying the food guidance information to their own diets. The various components of the food guidance system were designed to be used together and should not be used alone.

The Food Wheel is introduced in Session I. It groups common American foods (fruit; several types of vegetables; meat, poultry, fish and eggs; milk, yogurt and cheese; grains, breads and cereals; fats, sweets and alcohol) by the nutrients they contribute to diets. This illustrates the concept of nutritional variety, that is, the need to consume a variety of foods to obtain all the nutrients needed for good health. The Food Wheel diagram suggests ranges of servings of foods from each group that comprise a nutritious diet. The ranges of servings suggest amounts of food appropriate for individuals with differing food energy and nutrient needs. A companion piece to the Food Wheel, A Day's Worth of Food and Nutrients, provides more information on foods contained in each group and amounts of food to count as a serving.

The Food Wheel provides a visual context for discussion of food labeling and activities to help individuals determine where packaged foods and mixed foods fit into the guidance system. By keeping a 3 day food checklist record of foods they select from the Food Wheel groups, participants assess their current eating practices and identify areas for improvement.

In the third session of the course the food guidance system focuses on moderation issues. Food sources of fat, sweeteners, and sodium within each food group are highlighted. "Trade-offs" illustrate approximate amounts of fat and added sweeteners in some popular foods. Tables and text provide additional information on fat, sweetener, and sodium content of foods and illustrate the effect of different styles of food preparation. Participants are encouraged to use more frequently those food items from each food group that are lower in fat, sweeteners, or sodium, and to moderate use of these in food preparation and at the table. To accommodate food preferences the guidance system suggests that participants balance their choices of food items that are high in fat, sweeteners, or sodium with other choices that are lower, and make trade-offs to keep their overall diet moderate. For example, if an individual prefers whole milk or cheese rather than skim milk, he might "trade-off" the extra fat by using less salad dressing or butter.

Later sessions of the course provide other opportunities for participants to use the food guidance system to plan meals for family groups, and to evaluate diet plans from popular books or magazines.

Instructors

"Better Eating for Better Health" is taught under the auspices of an ARC chapter by an authorized instructor. An instructor must have training in nutrition (as a registered dietitian or nutritionist) or in a related field that includes some course work in human nutrition. Examples of professionals in related fields include registered nurses, health educators and home economists. Instructors for the course are recruited by ARC chapters and must complete ARC training in adult education methods, and the Nutrition Instruction Specialist course, which covers the content of the nutrition course (4).

ARC is encouraging chapters to seek participation of nutritionists and dietitians to assist in instructor training and to teach the course. Instructors who are not nutritionists are encouraged to team with a nutritionist to teach the course.

The Instructor's Guide cannot provide information on all nutrition topics that may be of interest to course participants. ARC chapters and instructors are urged to identify nutrition professionals in their communities who are willing to serve as information resources for instructors and participants during and after the course.

Course Development and Evaluation

A unique aspect of this project was the integration of evaluation components at all stages of course development. Several recent nutrition education research conferences have emphasized the need for formative evaluation during program development, as well as summative evaluation of program effectiveness after implementation (5, 6). Key elements of the evaluation of "Better Eating for Better Health" are summarized in Figure 1.

As a first step in course development a needs assessment was conducted to determine nutrition interests and information needs of adult consumers. In addition, a number of current surveys on nutrition topics of consumer interest were reviewed. Based on these findings, the project team defined curriculum goals and objectives and developed a course design. Topics selected included those of particular interest to consumers, as well as those nutrition concepts recognized by nutritionists as important for selecting a healthful diet. At the same time, the project team worked with evaluation specialists to develop a comprehensive evaluation plan. The development of the plan included identifying the types of information that would be needed for refining course materials, assessing course effectiveness, and improving course delivery. The comprehensive model for evaluation of the nutrition course has been described in detail elsewhere (7).

Course materials were developed by nutritionists on the project team based on current nutrition research. Early drafts of the individual units of the course were reviewed for technical accuracy by nutrition scientists in government, universities and industry. Drafts were revised by the project team based on the technical reviewers' comments. The materials were then condensed by educational writers into course materials used in the first pilot tests.

Figure 1. "Better Eating for Better Health": Development and Evaluation

- Assessment of consumer nutrition information needs and interests
- Development of comprehensive evaluation plan
- Technical review of course materials
- Three pilot tests at 5-6 ARC chapters
  To refine course content, activities, and evaluation instruments
- Educational design analysis
- Field test at 51 ARC chapters
  To further refine course materials and improve delivery
  To assess course effectiveness in improving nutrition knowledge, beliefs, and behavior

The first two pilot tests were designed as small-scale in-depth trials of initial drafts of course materials and evaluation instruments. The five sites (Oregon, Minnesota, Maryland, Virginia, and Washington, D.C.) selected for these pilot tests were geographically close to project team members. In the first pilot test, ARC instructors who were experienced in teaching other ARC health education courses met with project team members to discuss the content, organization and level of difficulty of the curriculum materials. In the second pilot test, these instructors taught the course to a total of 60 participants while project team members observed and acted as resources to the course instructors. This method permitted first-hand observation of any problems instructors and participants had with course materials. This was very useful to the project team in the revision of course materials.

At the same time, course materials were sent to additional technical reviewers. These included several Extension Food and Nutrition Specialists and others with expertise in nutrition education. Based on comments of the technical reviewers and the results of initial pilots, course materials and evaluation instruments were substantially revised by the project team. Additional information on key nutrition concepts was incorporated into the Instructor's Guide to serve as background for class presentations and for answering typical participant questions.

Additional nutrition course instructors were trained to use the revised course materials and a third pilot test was conducted at six chapters, with a total of about 100 participants. The objective of this pilot study was to obtain information needed to refine course materials and evaluation instruments in preparation for the field test.

Based on the results of the third pilot test the course materials were revised again. In particular, the amount of material to be covered in class was shortened significantly. In addition, more emphasis was placed on skills development of participants and more time was allotted to participant activities.

Prototype materials were published by ARC to use in the field test. The materials were typeset and included graphic illustrations. This provided a more accurate evaluation of course materials by minimizing possible negative reactions to poor graphic presentation.

In Spring 1983, 51 ARC chapters, 132 instructors and about 1500 people participated in a nationwide field test of "Better Eating for Better Health." This was the final phase of the evaluation. Data were obtained on socioeconomic and demographic characteristics of course participants, and the qualifications and experience of instructors who volunteered to teach the course. Data from a pre-test and post-test administered to nutrition course participants and control subjects taking other ARC courses were used to evaluate effects of the course on participants' nutrition knowledge, beliefs, and behavior. A telephone survey of 200 individuals who had completed the baseline survey was also conducted 8 to 10 weeks after the completion of the nutrition course to examine the sustained effects of the course on nutrition knowledge, beliefs, and behavior. State Extension leaders and all other nutrition experts who had reviewed earlier drafts of materials were sent copies of prototype materials and invited to submit additional comments. In addition, an educational design analysis of the prototype materials was prepared by the Office of Evaluation Research, University of Illinois at Chicago.

Results of the field test and comments of technical reviewers were used to revise the prototype course materials for final printing. Instructors and participants evaluated the course content, structure and materials very favorably. Thus final revisions of course materials were minimal. A discussion of the results of the field test evaluation may be found in the paper "American Red Cross Nutrition Course: Findings from the Field Test," presented at this Outlook Session (8).

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THE AMERICAN RED CROSS NUTRITION COURSE: FINDINGS FROM THE FIELD TEST

OUTLOOK '85

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The fifth phase of the American Red Cross Nutrition Course evaluation, a national field test, was designed to provide a systematic analysis of program implementation and effectiveness. A total of 51 chapters from 28 states and the District of Columbia participated in this last phase of the study. The evaluation addressed formative questions concerning strategies for improving the course, as well as summative questions dealing with the effect the course had on changing participant's nutrition knowledge, beliefs, and behavior. This paper presents selected findings from an array of research objectives which were established for the field test evaluation.[1]

Field Test Objectives

One of the primary concerns in developing a nutrition course is the relevance of course materials and instruction techniques for the intended audience. When course participants are self-selected, as is the case for the American Red Cross Nutrition Course, the target audience is initially unknown. Thus, a main objective of the field test was to analyze the sociodemographic composition of those who elected to participate in the course. This information enabled us to develop a profile of the potential audience for the course. In addition, we wished to determine if specific subpopulations were attracted to the course; for example, low income persons, minorities, and senior citizens. Because instructional duties in American Red Cross courses are usually handled by volunteer staff, a second objective of the field test was to investigate the possibilities of recruiting qualified volunteer instructors to teach the course nationwide.

A third, and major, objective of the field test was to assess the basic assumptions underlying the development of the American Red Cross Nutrition Course. Can a course, developed for a sociodemographically diverse audience, have a significant effect on participant's nutrition knowledge, beliefs, and behavior? If positive effects are found, can they be sustained over time? And does attendance in the nutrition course have an influence on participant's utilization of other sources of nutrition information?

We examined a variety of factors that could potentially affect the degree to which the course contributes to changes

in participant's nutrition knowledge, beliefs, and behavior: the background of participants, their satisfaction with the course structure and content, the effort participants expended in the course, the experience and training of instructors, and the type of instruction that participants received. These results provided the basis for several recommendations regarding improvement in the delivery of the nutrition course.

Data Collection Methods

Surveys of course participants were conducted at three separate points in time during the field test. The initial participant survey was implemented prior to the beginning of the first class by course instructors who were trained to administer the questionnaires. This first data set established a starting point, or baseline, from which to measure any changes in the participant's nutrition knowledge, beliefs, and behavior in terms of the objectives of the course. Additionally, it provided information on the sociodemographic characteristics of individuals attending the course. A total of 1,461 participants responded to this baseline survey.

The second participant survey was implemented by course instructors at the end of the last session of the course. As expected, fewer participants (N=1,031) completed the posttest questionnaires due to the attrition generally found when dealing with courses operating under the premise of voluntary attendance. Nutrition knowledge, belief and behavior items identical to those on the baseline questionnaire were included, along with questions designed to elicit participant's evaluations of the course content, teaching aids, and instruction strategies.

A third participant survey entailing a systematically selected subsample of 200 participants who had completed pretest questionnaires, was conducted by means of telephone interviews approximately ten weeks after the course was over. The purpose of this latter survey was to obtain information on the sustaining effect of any changes in nutrition knowledge, beliefs, and behavior on the part of participants and to identify factors which contributed to course attrition.

Control groups are used in evaluation research to ascertain if changes in the group receiving an intervention are due to the intervention itself (in this case the nutrition course) or if they are a consequence of other influences. Ideally, a control group should be identical to the experimental group in terms of sociodemographic characteristics and relevant experiences. However, in the case of the nutrition course, it was not advisable to ask

individuals who wanted to take the course to participate in a control group that would not receive any instruction. Nor was it possible to delay instruction to obtain a control group. Our solution was to solicit volunteers for the control group from participants in other Red Cross classes offered by chapters involved in the field test. Only those courses offered during the field test period, and conducted for approximately the same length of time as the nutrition course, were eligible. Although the resulting control group was not completely analogous along the desired dimensions of sociodemographic characteristics, nutritional experiences, and predispositions to participate in a nutrition course, it did enable us to make some comparisons between course participants and nonparticipants. Two surveys, with questions identical to those given to nutrition course participants, were distributed to the controls at the beginning and completion of their course. The procedure of introducing these surveys to the control group was the same as the procedure used for nutrition course participants. In total, 212 individuals participated in the baseline control group study and 133 of these completed posttest questionnaires.

Data concerning the training and experience of course instructors, their evaluations of course materials, and their mode of instruction were obtained from 155 instructors who were asked to respond to the survey immediately after the course they conducted was over. This information was analyzed in conjunction with changes in participant's nutrition knowledge, beliefs and behavior, in order to identify the instructor attributes and teaching techniques that were most likely to maximize the effectiveness of the course.[2]

Table 1. SUMMARY OF FIELD TEST SURVEY RESPONSES

Survey	Number of Responses
Participant Baseline	1461
Participant Posttest	1031
Participant Telephone	200
Control Group Baseline	212
Control Group Posttest	133
Nutrition Course Instructors	155

Who Attended the Course?

We found that the typical participant attending the nutrition course during the field test could be characterized as: a married, white, female, high school graduate between the ages of 25 and 54, with a household income above the national median. Additional attributes of participants include primary responsibility for planning, shopping and preparing meals for themselves and two other household members. Typical participants had never taken a nutrition course but had obtained some nutrition information from other sources. They generally perceived themselves to be in good health, although they acknowledged that someone in their household had an overweight problem.

Our findings also indicate that the course attracted a broad audience. For example, 10 percent of the participants were senior citizens, 65 years of age and older; 28 percent report a total household income of under $15,000, which was well under the national median in 1983; and 23 percent were members of racial minorities.

Who Taught the Course?

Most of the instructors who responded to the field test survey were Red Cross volunteers (128), although a few paid staff also taught the course. For many of the volunteers, being a Red Cross instructor was a new experience; 62 percent had never taught a Red Cross course prior to the nutrition course.

The instructors, who were predominantly female, reported a relatively high level of education. Ninety percent had attained a Bachelor's degree, and half of these held graduate degrees. Almost 50 percent of the instructors majored in nutrition or dietetic fields of study. In fact, only six percent of the 155 instructors responding the the survey had been trained in fields that were not related to nutrition, health, biology or home economics. Moreover, 72 percent had employment experience teaching in the biological sciences or a health-related field, averaging approximately six years. These findings indicate that well-qualified instructors for the course were readily available in the field test sites.

What Was the Effect of the Course?

Three scales were developed to measure the influence of the American Red Cross course on participant's nutrition knowledge, beliefs and behavior. These scales contained a pool of items which represent the goals of the course relative to providing specific knowledge about key aspects of nutrition, making nutrition beliefs consistent with

current standards, and improving nutrition behavior. The knowledge scale consisted of 15 multiple choice questions pertaining to facts about nutrients, sodium, vitamins, food additives, weight loss, and the relationship of disease to nutrition. Eight nutrition belief items focused on the same content areas and were constructed using a five category scale, ranging from strongly disagree to strongly agree. The nutrition behavior 11-item scale measured the frequency of participant's conduct related to the knowledge and belief objectives.[3] Our overall results indicate that participants gained in their level of nutrition knowledge and acceptance of positive nutrition beliefs after attending the course. Moreover, the findings show a large improvement in nutrition behavior (See Table 2).

Table 2. CHANGES IN NUTRITION KNOWLEDGE, BELIEFS, AND BEHAVIOR*

Scale	Means	Difference
Nutrition Knowledge		
Baseline	8.91	1.96**
Posttest	10.87	
Nutrition Beliefs		
Baseline	27.48	3.29**
Posttest	30.77	
Nutrition Behavior		
Baseline	35.98	5.05**
Posttest	41.03	

*The change in nutrition knowledge, beliefs and behavior is based on 885 responses. Possible ranges for each scale are: Nutrition knowledge, 0-15; Nutrition beliefs, 5-40; Nutrition behavior, 5-55. The absolute degree of change cannot be compared among the scales due to differences in the length and coding of each instrument.
**p<.000

We also analyzed changes on the individual nutrition knowledge, belief, and behavior items to identify specific points of strength and weakness in the course. The results suggest that, while participants gained in all the content areas measured, there was room for improvement for a fairly

large proportion of participants who completed the course. These findings enabled us to make recommendations regarding the content areas which should receive greater emphasis in future course offerings.

The control group baseline scores were almost identical to the baseline scores for the treatment group on all three scales. However, the control group showed no statistically significant overall changes in nutrition knowledge, beliefs, and behavior between the baseline and posttest periods. In fact, an examination of the individual knowledge, belief and behavior items revealed only one significant change for the control group. There was a decrease in the use of salt. This finding may be attributed to national media coverage on the role of salt in hypertension during this period and the increased advertising and availability of salt alternatives and low sodium products. The key point is that the control group made no significant overall improvement during the time period analogous to the course, and, therefore, the improvement in the participants who took the Red Cross nutrition course is most reasonably attributed to the course itself. This is dramatic evidence that the course produces a strong positive shift in the nutrition knowledge, beliefs, and behavior of those who attended--a shift that cannot be accounted for by other factors.

In order to determine if the positive effect of the course could be sustained, ten weeks after the course was over we asked a sample of course participants to answer a subset of items drawn from the original knowledge, belief, and behavior scales. Table 3 presents the results of our analysis for this sample, using the reduced number of items in our measurement instruments. The findings indicate that, while participants learned a great deal from the class, a substantial proportion of this new knowledge was lost. In contrast, participant's nutrition beliefs remained fairly consistent with the beliefs they had acquired at the end of the course. The most important finding, however, relates to the quality of nutrition behavior, which improved significantly during the 10 weeks after the course was completed. This suggests that the course not only encourages substantial behavioral changes initially, but that these changes become acceptable parts of the participant's life-style, reflected in a continued improvement in nutrition behavior.

Table 3. TELEPHONE SURVEY: FOLLOW-UP EFFECTS

Scales*	Mean Change** Posttest to telephone	Mean Change** Baseline to telephone
Nutrition knowledge	-.28	.45
Nutrition belief	-.42 ns	1.95
Nutrition behavior	1.07	4.49
	N=134-148	N=193-199

* Possible ranges for each scale are: Nutrition knowledge, 0-7; Nutrition beliefs, 5-25; Nutrition behavior, 5-35. Because some of the original items were deleted in the telephone survey instruments, these scores are not comparable to the change scores in Table 2.
** All differences are significant at the .05 level except that followed by "ns."

We might speculate that the initial gain in nutrition knowledge influences beliefs that the participants have about good nutrition. Even after they lose some of their specific knowledge, the improved beliefs persist. These beliefs appear to enhance positive nutrition behavior.

One final outcome concerns the amount of nutrition related information participants obtained from food industry publications, nutrition specialists, radio, or popular magazines. In comparing the amount of information participants said they had received in the year prior to attending the course with the amount of information from these sources acquired during the course period, we found a statistically significant increase. This change can be considered a positive result of the course, since it suggests that participants become more aware of various sources of nutrition information.

Factors Related to Course Effectiveness

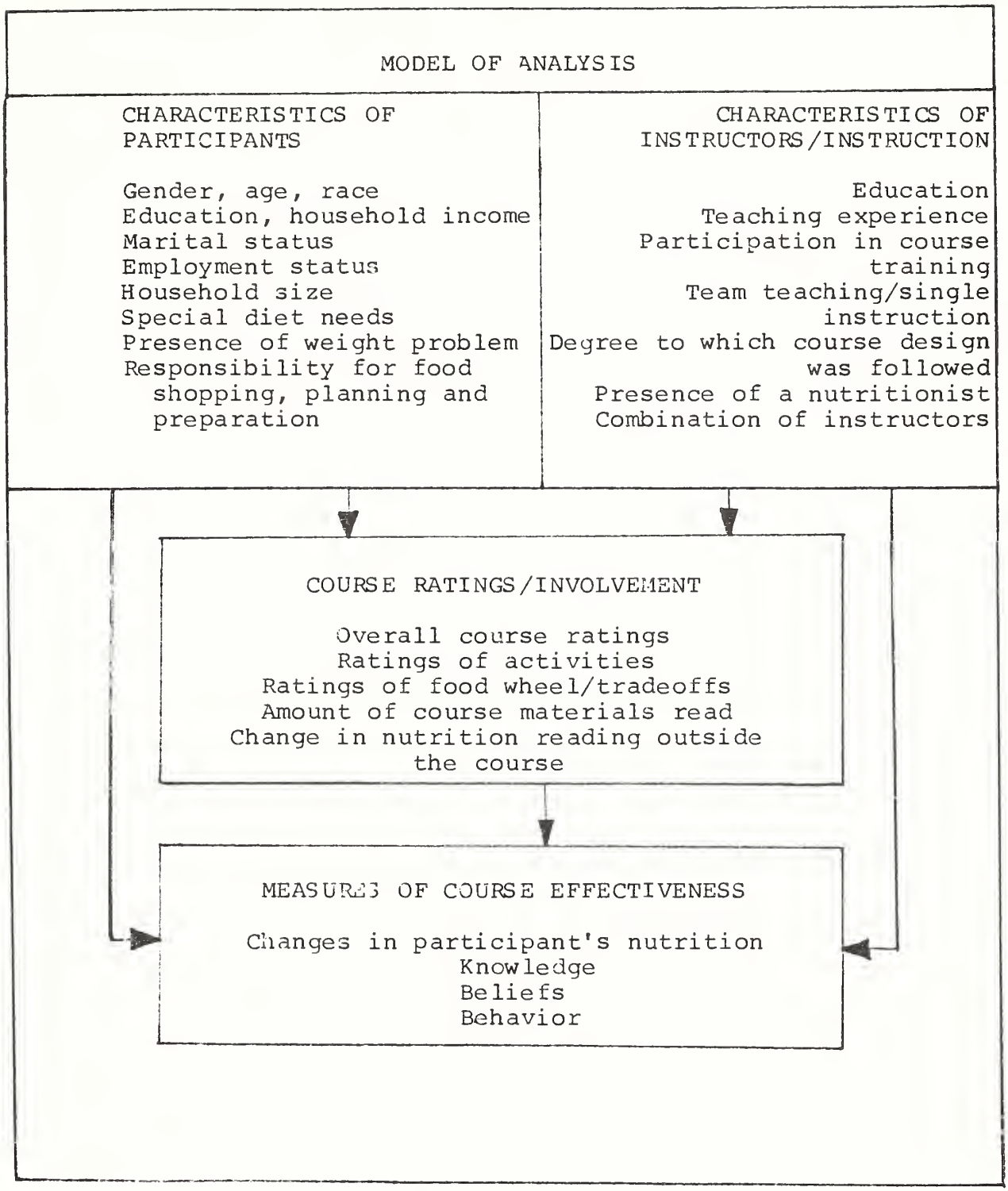
While the average participant gained a great deal from taking the nutrition course, there are considerable individual differences between participants. We examined three sets of variables that might potentially explain

differences in level of improvement. Firstly, we used two clusters of variables, participant characteristics and instructor/instruction characteristics, to explain (predict) how participants respond to the course in terms of their course ratings and involvement. Secondly, we examined the effect of these same two clusters of variables on the three measures of course effectiveness: knowledge, beliefs and behavior. Because participant's baseline scores appear to be a factor influencing their relative gains, this variable was included in the analysis. Finally, since participant's responses to the course and their involvement may also explain changes in nutrition knowledge, beliefs, and behavior, we analyzed the relationship between these two variable clusters. Figure 1 presents a model of the multivariate analysis which was undertaken.[4]

Of the thirteen participant background characteristics examined, only one appeared to bear a consistent relationship to how the students rated the course and how much of the materials they read. Course ratings and the amount of material read varied positively with age. Older participants were more likely to give high ratings on the individual sessions, course activities, food wheel and the tradeoffs than their younger counterparts. They also read more of the course materials. The youngest participants did not seem to enjoy the course as much and expended less effort reading the Participant's Guide. The fact that other traditional lines of stratification, such as race, education, gender, and income do not have an important effect on how students evaluate the course can be considered a positive finding. Across a broad spectrum of background characteristics, students responded positively to the course and participated in it actively. Thus, the lack of predictability reflects the broad appeal of the course.

The second cluster of factors, instructor/instruction variables, also have limited success in explaining how participants rate the course or how much effort they invest in it. None of the variables has an effect on ratings of class activities, the food wheel, tradeoffs, or changes in the amount of nutrition reading participants engaged in outside of class. However, one variable, the extent to which instructors followed the course design, does significantly affect participant ratings and involvement. In classes where instructors deviated from the course design, their students were less likely to evaluate the course positively overall and read less of the course materials.

A number of participant characteristics shape how much is gained from the nutrition course. Most importantly, the baseline nutrition behavior is the strongest predictor of changes in nutrition knowledge, beliefs, and behavior. The


MODEL OF ANALYSIS
CHARACTERISTICS OF PARTICIPANTS
Gender, age, race
Education, household income
Marital status
Employment status
Household size
Special diet needs
Presence of weight problem
Responsibility for food shopping, planning and preparation
CHARACTERISTICS OF INSTRUCTORS/INSTRUCTION
Education
Teaching experience
Participation in course training
Team teaching/single instruction
Degree to which course design was followed
Presence of a nutritionist
Combination of instructors
COURSE RATINGS/INVOLVEMENT
Overall course ratings
Ratings of activities
Ratings of food wheel/tradeoffs
Amount of course materials read
Change in nutrition reading outside the course
MEASURES OF COURSE EFFECTIVENESS
Changes in participant's nutrition
Knowledge
Beliefs
Behavior

more appropriate a student's behavior upon entering the course, the less he or she gains from it, when controlling for other background factors. This is a critical finding. While those who enter the course with the most desirable nutrition behavior gain something from the course, participants who have the lowest level gain even more. These results suggest that the effectiveness of the course can be maximized by attracting participant groups which are identified as having low levels of nutrition practice.

When we control for participant's baseline performance, several other background factors emerge as predictors of course outcomes. As might be expected, the higher the participant's level of education, the more is gained from the course in all respects. Women gain slightly more than men in knowledge and beliefs, but not in terms of improved behavior. Those who are employed full-time have the same patterns, with greater gains in knowledge and beliefs than those who are not employed full-time. Weight or diet concerns in the household appear to stimulate improvements in nutrition beliefs and behavior. And whites gain somewhat more knowledge than nonwhites, even when education is accounted for. Finally, positive outcomes for single participants are lower than for their married counterparts. These findings suggest that greater attention should be directed to specific groups of clients to assist them in achieving the best possible outcomes.

Our examination of the influence of instructor and instruction characteristics on course effectiveness show that the degree to which instructors follow the course design is not only important in how participants perceive the course, but it is also crucial in terms of how much they gain from it. Students whose instructor(s) followed the design closely have the greatest gains in nutrition knowledge, beliefs and behavior. Adhering to the course design should be stressed in the training of future instructors. While having a nutritionist as an instructor is related to gains in nutrition behavior, team teaching with a combination of a nutritionist and a non-nutritionist appears to be the best arrangement for improving beliefs. It was recommended that the Red Cross should pair a nutritionist with a non-nutritionist, whenever possible, to achieve maximum results from the course.

How students perceive the course and how involved they become in it are also key issues relating to the course outcomes. The more participants like the course, the more they seem to gain from it. Reading nutrition materials has a significant effect on improvements not only in terms of knowledge but also with respect to beliefs and behavior. These results indicate that instructors should not rely on their own presentations to the exclusion of written course

material. By encouraging students to read course materials and other nutrition publications, instructors can positively influence how much students profit from taking the course.

Conclusions

Our findings indicate that the American Red Cross Nutrition Course has the potential to attract a broad cross-section of participants and recruit qualified instructors to teach the course. While most nutrition education research has focused on programs designed for and targeted to specific subpopulations, such as pregnant teenagers, low income mothers, primary school children, and cardiovascular patients,[5] little is known about the efficacy of programs aimed at a broadly based constituency. The results presented here indicate that nutrition courses can be successfully implemented with a diverse audience. Moreover, our data suggest that positive dietary behavior becomes self-reinforcing, with improvements continuing following the completion of an educational intervention. These findings demonstrate the viability of nutrition education as a strategy for improving the dietary behavior of the general public.

FOOTNOTES

1. For a comprehensive discussion of the evaluation model, the reader may refer to: Patricia Klobus Edwards, Rebecca Mullis, and Barbara Clarke (1984) "A Comprehensive Model for Evaluating Innovative Nutrition Education Programs" (Under journal review.) A more complete presentation of the field test results can be found in: Patricia K. Edwards, Alan C. Acock, Robert L. Johnston and Kristen L. DiMicco (1983) "American Red Cross Nutrition Field Test: Technical Report," American Red Cross, Washington, D. C.

2. A survey of the Nursing and Health Services Directors for each of the 51 participating chapters was also undertaken at the end of the field test. The findings from this part of the project, which included estimates of costs, projections for course demand, and an assessment of course promotion materials, are reported in the technical report cited above.

   Two pretests of all the survey instruments used in this study were conducted prior to the field test. Following each pretest, scale items were analyzed in terms of their validity and reliability using principal factor analysis and alpha reliability. Modifications were made in the survey items when dictated by the analysis.

3. The alpha reliabilities computed for each scale are: Baseline Knowledge .75, Beliefs .56, Behavior .79; Posttest Knowledge .79, Beliefs .65, Behavior .82. Additional information concerning the specific scale items, results of a factor analysis of the scales, and the relationship of changes among the knowledge, belief, and behavioral domains can be found in the reports cited above and Patricia Klobus Edwards, Alan C. Acock and Robert L. Johnston (1984) "Outcomes of an Educational Approach to Nutrition Behavior Change" (Under Journal review.)

4. Tables reporting a multivariate regression analysis which provides the basis of our findings in this section can be obtained from the author.

5. See, for example: J. Perkin, "Evaluating a nutrition education program for pregnant teenagers: Cognitive vs. behavioral outcomes," Journal of School Health, 53:420-422, 1983; K. Rosander and L. S. Sims, "Measuring the effects of an affective-based nutrition education intervention," Journal of Nutrition Education 13:102-105, 1981, and; R. G. St. Pierre and D. T. Cook, "An evaluation of the nutrition education and training program," Evaluation and Planning 4:335-344, 1981.

TRANSPORTATION 1985

OUTLOOK '85

Keith A. Klindworth and Paul E. Kepler,
Office of Transportation

1985 Agricultural Outlook Conference
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Over the past decade, aggregate demand for agricultural transportation has fluctuated widely in conjunction with bulk grain exports, and at times, short term difficulties have resulted from an inadequacy of existing transportation capacity to meet agricultural transportation demand. An expanding export market in the 1970's was met by a large increase in transportation capacity, both rail and barge, in the latter part of the decade and the early 1980's. The declining export market in recent years has resulted in an oversupply of capacity in relation to demand and this factor alone greatly influences the outlook for agricultural transportation in the near term.

Exports account for only a portion of the total movement of agricultural commodities off-farm. Although estimated to account for only about one-third of the total tonnage moving from farm, exports are generally assumed to drive agricultural transportation demand. Since domestic use of grain generally occurs near production areas and exports typically involve much longer movements, it is assumed that exports have a greater effect on equipment utilization and transport demand than off-farm movements to domestic destinations. For these reasons, domestic traffic is assumed relatively constant.

The outlook for 1985 is that agricultural transportation will continue to be characterized by excess capacity, especially in the rail and barge modes. Although export demand for U.S. agricultural commodities is expected to increase about 10% in 1984/85, a more normal level of domestic movements is expected. No difficulties are anticipated in the ability of the nation's transportation system to accommodate agriculture's 1985 transportation requirements, either for export or domestic uses.

Movement to Export Points

Dry bulk commodities, including grain and grain products, oilseeds and dry oilseed products, and feeds typically constitute over 90% of the tonnage of U.S. agricultural exports. In 1982/83, the raw agricultural commodities of wheat, coarse grains, rice and various oilseeds composed over 82 percent of the tonnage of agricultural exports. All of these commodities share similar physical characteristics and generally compete for the same types of transportation equipment.

Other agricultural commodities, such as fruits and fruit products, contribute to the value of U.S. agricultural exports many times their percentage of actual export tonnage. The contribution of these high value

U.S. agricultural products is particularly important in view of recent information suggesting that the U.S. share of world trade in high value agricultural products has stagnated.[1]

The export tonnage of the dry bulk commodities, oilseed products, and cotton is shown in Table 1, which also indicates that in 1984/85 U.S. agricultural exports are projected to increase approximately 10 percent from the 1983/84 level of 124.6 mmt. This increase is almost exclusively due to increases in wheat, coarse grains and soybean exports.

Table 1 -- U.S. Agricultural Exports: Volume of Selected Commodities, Marketing Years 1980 - 1985*

Commodity	1980/81	1981/82	1982/83	1983/84	1984/85
	Million metric tons				
Wheat	41.2	48.3	41.1	38.9	42.9
Coarse Grains	69.5	58.6	54.0	55.9	62.6
Rice	3.0	2.7	2.2	2.3	2.2
Soybeans	19.8	25.3	24.6	20.2	22.0
Soybean Oil	.8	.9	.9	.8	.7
Soybean Meal	6.2	6.3	6.5	5.0	5.1
Cotton	1.3	1.4	1.1	1.5	1.3
Total	141.8	143.5	130.4	124.6	136.8

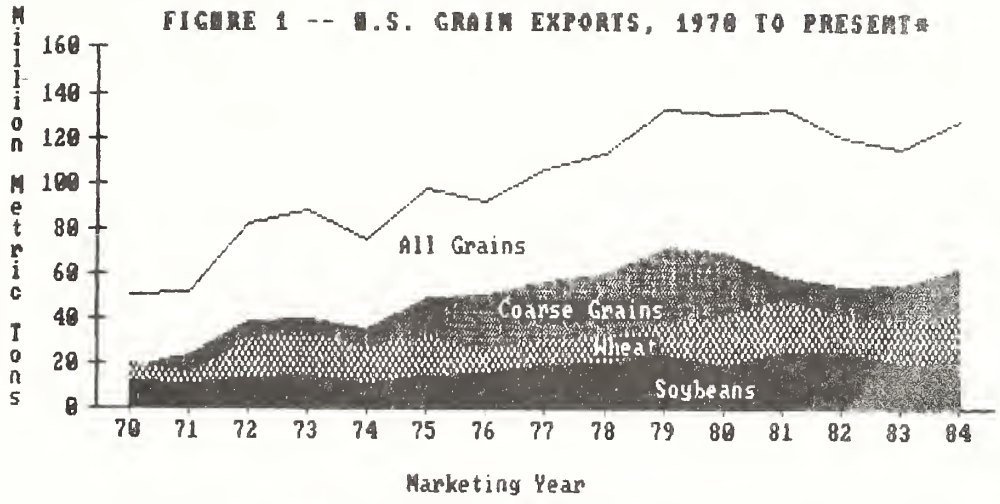
* 1983/84 exports are estimated and 1984/85 exports are projected.

Source: U.S. Department of Agriculture, World Agricultural Supply and Demand Estimates, October 12, 1984 and prior issues.

As is illustrated in Figure 1, annual volumes of U.S. grain exports each year since 1970 have been quite variable. In calendar year 1973, grain exports surged 50 percent over the previous year as a result of heavy wheat sales to the Soviet Union, but in 1974, grain exports declined 18 percent. In 1978, the volume of U.S. grain exports increased sharply by 25%. Growth in export volume slowed during the subsequent years and exports began to decline in 1982. This variability over the years has stressed the ability of the U.S. transportation system to match existing capacity with current export demand, and major transport equipment shortages materialized during the height of the exports, from the Fall of 1977 to the Spring of 1980.

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[1]Although the U.S. share in the world market of low-value product trade increased sharply in the 1970's from a quarter to a half, the U.S. share of high value products stagnated at 9-10 percent. See High Value Agricultural Exports: U.S. Opportunities in the 1980's, Economic Research Service, U.S. Department of Agriculture, Foreign Agricultural Economic Report No. 188.



* Marketing year 1984/85 exports are projected.

Although grains are transportable by rail, truck and truck-barge and compete for the same type of transport equipment, regional specialization of production and regional differences in the availability of competitive modal alternatives and in the accessibility of alternative export points result in some difference in the type of tranport used. For instance, the concentration of major production areas close to the Mississippi River system results in a primary reliance upon barge transportation for export movements of corn and soybeans from these areas. In contrast, wheat from wheat growing states in the South Central and North Central Plains is generally shipped by rail to export positions in the Texas Gulf and the Pacific Northwest, although trucks are also used for direct shipment to barge transloading points and port areas.

The quantity and location of the foreign demand for U.S. grain also influences the export region and the mode used, albeit to a lesser degree. Table 2 shows that Asian markets have been the primary export market for U.S. wheat with an average of 47% of U.S. wheat shipments in the three year period of 1981-1983. Most of the wheat destined for Asian destinations was exported from Pacific ports (53%) and was handled primarily by rail or to a lesser extent, truck-barge on the Snake Columbia River. On the other hand, the primary market for U.S. soybean exports over these years has been the European continent, with 61% of U.S. shipments. Almost all of the U.S. soybeans (85%) moving to Europe were shipped from U.S. Gulf ports and were likely delivered to those ports by inland barge. Major destinations of U.S. corn exports include Asia (40 percent) and Europe (34 percent). About half of the European corn came from the U.S. Gulf, although Atlantic ports also shared in these exports. Asian destinations also received a large percentage of corn from U.S. Gulf ports (72%).

Thus, modal demand can be influenced by changes in the foreign destinations and the commodity mix of export sales, as well as change in the total volume of export sales.

Table 2 -- Distribution of U.S. Grain Exports by Foreign Destination, Average For Calendar Years 1981, 1982, 1983

Destination	Wheat	Yellow Corn	Soybeans	Other	Total
	Percent				
North America	0	1	1	0	1
Latin America	20	9	4	30	13
Europe	8	34	61	29	30
USSR	11	10	2	0	8
Asia	47	40	31	39	40
Oceania	0	0	0	0	0
Africa	14	6	0	2	7
Total	100	100	100	100	100

Note: Percentages are based on inspections for export for years 1981, 1982 and 1983 and are unadjusted for transhipments. Individual percentages may not sum due to rounding.

Source: Grain Market News, Agricultural Marketing Service, U.S. Department of Agriculture, various issues.

Modal demand for export movements also fluctuates seasonally according to the navigable condition of the inland waterway system. Figure 2 indicates barge loadings are extremely seasonal with low shipping activity during the first of the year when the upland river system is normally closed, and high shipping activity during the post-harvest period. Rail exports, as indicated by Figure 3, are complementary to barge shipping with the high points of shipping activity occurring during the first of the calendar year, at the low point of barge shipping.

The moderate increases in grain exports during the upcoming year should easily be accommodated with normal distribution patterns from production areas to export locations. Increases in demand are spread quite evenly among wheat, coarse grains, and soybeans, and foreign demand has not shifted appreciably. Of current interest is the Soviet Union which is expected to turn to the U.S. for a larger share of their import requirements due to grain handling problems in Argentina and Australia and a drought-reduced Canadian crop. Between June 29 and September 6, 1984 the Soviets bought 12.7 mmt of U.S. grains, the largest amount since their purchase of 17.6 mmt during the summer of 1972. Over the past three years, 90 percent of U.S. grain exports destined for the USSR were exported from U.S. Gulf ports.

FIGURE 2 -- WEEKLY AVERAGE BARGE LOADINGS BY MONTH

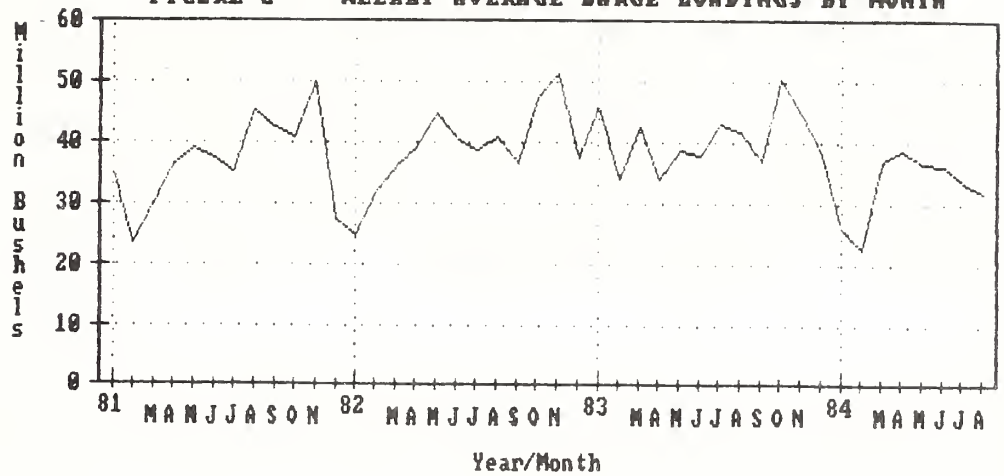
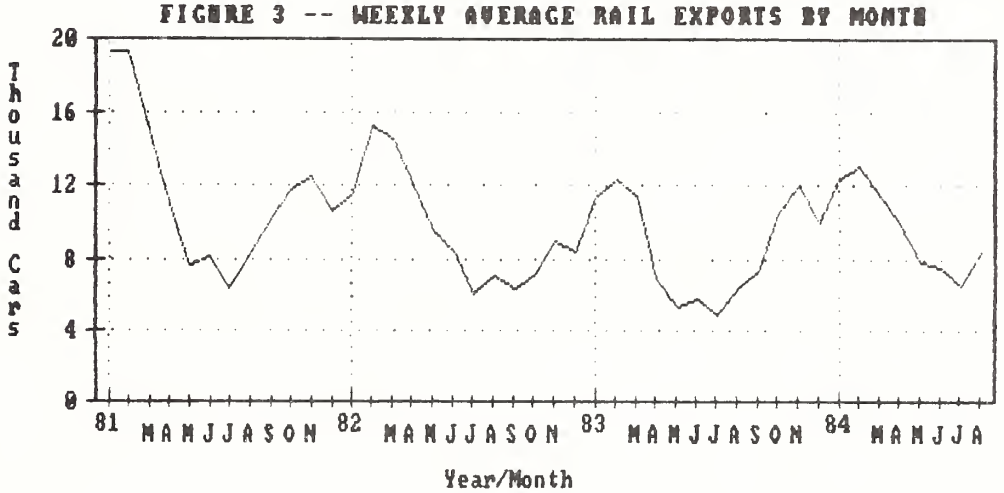


FIGURE 3 -- WEEKLY AVERAGE RAIL EXPORTS BY MONTH



Movements for Domestic Use

Grain

The impact of agricultural commodities moving off-farm for domestic uses on transportation demand is usually not considered as large as their share of off-farm movements in volume terms would indicate. Most domestic grain movements are of relatively short distance to intrastate locations and their contribution to a ton/mile measure of agricultural transport demand is not nearly as significant as their share of off-farm movements on a tonnage

basis.[2] Most evidence suggests that the demand for domestic transportation is fairly stable, and that the operational flexibility and supply elasticity of motor carrier transportation for these short-distance moves make short-term or localized aberrations manageable.

The exception may have been 1983 when the combination of a devastating drought and the Payment-In-Kind program caused a significant increase in domestic movements to many grain deficit areas of the country. In the Fall of 1983, an Office of Transportation analysis of feed grain deficits and surpluses by state suggested that over a 50% increase in interstate domestic feed movements would be necessary to meet the feed demand in grain deficit areas of the country for the upcoming feeding year. As would be expected with rail being the primary mode for interstate domestic movements, this increased demand for feed movements was reflected in increased rail carloadings during the second half of 1983. A comparison of estimated 1983 with 1982 domestic rail movements of grain, defined as total rail carloadings less deliveries to ocean export locations, indicates 3rd quarter 1983 domestic rail movements were 30% higher and 4th quarter were 33% higher than comparable quarters for the previous year. Figure 4 illustrates weekly total carloadings and rail deliveries of grain to port areas since January, 1981.

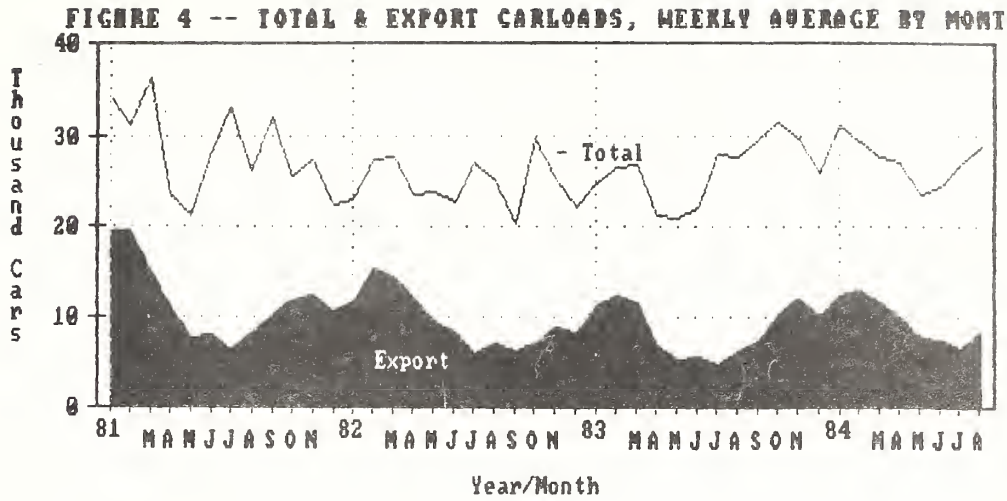
Normal crop production throughout the United States in 1984/85 should relieve much of the pressure which developed during the recent year for the import of feed supplies from non-traditional supply sources and result in a more normal level of domestic movement. One of the results of the 1983 imbalance of the feed grain production and feed demand in some areas was the significant increase in the use of wheat as a feed, from an estimated 5.3 mmt. to 10.3 mmt. nationwide. Wheat feeding is forecast to decline in 1984/85 and total domestic use of wheat is projected at 29.0 mmt., marginally smaller that the estimated 1983/84 total domestic use of 30.3 mmt. Feeding of coarse grains, which usually represents about 80% of domestic use of coarse grains, is expected to increase 10.3 mmt. above the 1983/84 level of 114.9 mmt, but still remain well below the 1982/83 level of 139.6 mmt. It is not anticipated that this increase will have any noticeable effect on the domestic transportation demand. Total domestic use of soybeans is expected to be approximately 29.6 mmt. in the 1984/85 marketing year of which 27.2 mmt. (92 percent) will be processed into oil and meal byproducts. Processing demand, even though slighly higher than 1983/84, is still well below the 1982/83 level of 30.2 mmt and it can be expected that movements to and from soybean processing locations will be accomplished much along normal distribution patterns with little marginal effect on the aggregate transportation demand.

Perishables

The transportation of perishable agricultural commodities from farm and processing locations to markets is fundamentally different from the transportation of bulk grain and grain products. Perishable commodities, such

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[2]See Grain Movements, Transportation Requirements, and Trends in United States Grain Marketing Patterns During the 1970s, Leath and Hill, North Central Regional Research Publication No. 282 which indicates of a total of 271 mmt. of grain movements in 1977, 44% were intrastate to domestic destinations, 36% were to export locations, and 20% were interstate to domestic destinations. Trucking accounted for over 75% of the movement of intrastate domestic tonnage.



as meats, poultry and eggs, milk and milk products are typically of high value and are extremely service sensitive. Specialized equipment with environmental control features are used and service reliability is an important consideration in modal choice. The total domestic movement of these perishable commodities is not small; domestic movements of meats, poultry and eggs, milk and milk products, fruits and vegetables, and sugar were estimated at 172 mmt. in 1982 compared with an estimated domestic movement of the bulk grain and grain products of 187.3 mmt.

The domestic movement of perishable agricultural commodities has been dominated by motor carrier transportation over the last decade. Various factors have contributed to the predominance of trucking; the operational flexibility of trucking and a record of service reliability among many shippers have probably been the leading causes. Rail share of these movements has typically been very small and water carriage has been insignificant. Air transportation is used primarily for very specialized moves of extremely perishable or high value shipments.

Over 80% of the domestic movements of perishable agricultural commodities in volume terms are either milk and milk products (70.8 mmt., 1982) or fresh fruits and vegetables (65.4 mmt., 1982). With milk production typically concentrated close to major sources of demand, length of hauls tend to be short and dominated by specialized truck transportation. On the other hand, since production of most fruits and vegetables is concentrated in the climatically favorable areas of California, Texas, Florida and the Pacific Northwest, fresh fruits and vegetables must be transported long distances to the major demand centers of the Midwest and Northeast. In spite of these long hauls, fresh fruit and vegetables is also dominated by truck transportation, averaging at least 85% of tonnage since the 1978 as is indicated by Table 3.

Table 3 -- Fresh Fruit and Vegetable Shipments, Percentages By Mode, 1978-1984

Mode	1978	1979	1980	1981	1982	1983	1984
	Percent						
Rail	10.4	8.9	8.6	8.3	8.0	8.9	5.4
Truck	88.8	90.3	90.0	88.6	87.8	85.5	86.4
TOFC/COFC	.7	.8	1.4	3.0	4.1	5.6	7.3
Other	.1	.1	.1	.1	-	-	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: U.S. Department of Agriculture, Fresh Fruit and Vegetable Shipments, FVUS-7, Various issues

Note: Year 1984 is based on data up to October 20. Individual percentages may not sum due to rounding.

Transportation Rates

According to the only measure of aggregate pricing in the railroad industry, the Bureau of Labor Statistics rail price indices, railroad rate increases from 1977 to 1983 have outpaced increases in two general indicators of inflation for agriculture, the prices paid by farmers on production inputs and the consumer price index for services. With 1977 equal to 100 for each available series, 1983 indexes were as follows:

Prices Paid By Farmers on Production Inputs	153.0
Consumer Price Index for Services	177.5
Railroad Rates	
All Products	178.7
Farm Products	179.2
Food Products	182.6

These data indicate that railroad rate increases since 1977 have exceeded the prices paid by farmers on production inputs and slightly exceeded the consumer price index for services for the same period. Railroad rates on farm and food products were slightly higher than the index for all railroad freight. At present, these indices measure rail rate changes on the basis of constant 1976 service units. Questions concerning the current validity of this index, in view of the substantial changes in the types of available rail service for grain movements since 1976, i.e., multiple car versus single car service, should be resolved when the index is updated to a 1982 base.

Current Transportation Issues

The focus of this section of the 1985 outlook for agricultural transportation is on the developing trends and issues occurring in transportation that are expected to affect agricultural shippers. In 1985 and beyond, three of the issues in transportation which are bound to affect agricultural shippers are: the increasing consolidation of transportation systems and the use of contracted rail service, and the growing deterioration of the rural road and bridge infrastructure.

Consolidation of Transportation Systems

Perhaps the most salient feature of the changing transportation environment over the past year has been the open sanction and encouragement of intermodal and intramodal consolidation and integration of transportation systems. Consolidation has always been occurring in the rail industry, but merger activity in the industry within the last five years has been increasingly between railroads of significant power and position within the industry. Beginning approximately in 1980, the era of the "mega-mergers" has resulted in a major transformation of the structure of the U.S. railroad industry[3]. Since 1980, ICC approval has resulted in the following new rail combinations:

March 25, 1980	-- Burlington Northern and St. Louis-San Francisco
September 23, 1980	-- Chessie System and Seaboard Coast Line
March 19, 1982	-- Norfolk and Western and Southern
September 24, 1982	-- Union Pacific, Missouri Pacific and Western Pacific

In addition, the ICC is currently considering a merger proposal from the Santa Fe and the Southern Pacific and is expected to render a decision by mid-1985.

These ICC decisions and an accelerated merger process can be directly attributed to revised merger procedures stipulated by the Railroad Revitalization and Reform Act of 1976 (the 4R Act), and the Staggers Act of 1980. The 4R Act encouraged rationalization of the rail system through consolidation and the Staggers Act expedited merger approval or denial and redefined merger requirements.

In addition to the merger of solvent, financially-strong railroads within the industry over the past five years, the disposition of the assets of bankrupt railroads will indirectly increase the concentration within the industry as as existing roads are able to expand their service area. For instance, the disposition of the Milwaukee Road assets is expected to significantly affect the balance of Midwestern rail service no matter the

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[3] A Critique of and Recommendations for the ICC's Evaluation of Proposed Railroad Mergers, Michael R. Crum, ICC Practitioners' Journal, May/June, 1984, Vol. 51, No. 4, p. 368.

result of the case. In addition, the disposition of Conrail, a combination of several bankrupt Northeastern railroads, could result in a further consolidation of rail services in the East if one of the final three bidders approved by the Secretary of Transporation, a major Eastern railroad, prevails.

While the pace of intramodal consolidation within the rail industry has been significant over the past five years, the major policy change in intermodal consolidation was the decision by the ICC on July 24 to allow CSX Corporation to control American Commercial Lines, which officially permitted the first major rail-barge merger in U.S. history. The Commission established a 5-year oversight program to handle complaints about any potential abuses resulting from the merger and the reporting of financial data by CSX and ACBL. CSX and opponents of the rail-barge consolidation had fought in the courts and in the ICC since June of 1983 over issues concerning whether the merger would violate provisions of the Panama Canal Act of 1912 and whether a merger between the two would be in the public interest.

Agricultural shippers need to be concerned about the evolving consolidation of the transportation system for a number of reasons. It appears that one of the results of the Staggers Act has been an increase in competitive activity among railroads at the expense of cooperative activity. Cooperative activities among railroads, such as the establishment of joint rates and routes and cooperative interchange charges, are not being encouraged under current ICC interpretation of the Staggers Act. When combined with the demonstrated consolidation of the transportation system, both rail with rail and now rail with barge, agricultural shippers may be faced with fewer competitive markets and fewer shipping alternatives in the future.

The Use of Contracted Rail Service

Section 208(A) of the Staggers Rail Act added a new section to the Interstate Commerce Act which will likely become of great significance to many agricultural shippers. The section expressly permitted rail carriers to enter into contracts with rail shippers and provides the opportunity for both railroads and shippers to privately negotiate and tailor rail rates and services to their individual situations.

Although the use of rail contracts developed relatively slowly in the initial period after Staggers, contract filings with the ICC have increased rapidly over the past two years as is illustrated by the following table:

Period	Number of Contracts
Oct. 1980 - Dec. 1981	768
Jan. 1982 - Dec. 1982	3,248
Jan. 1983 - Dec. 1983	8,285
Jan. 1984 - Nov. 1984	6,556

Almost all commodities hauled by railroads have been covered by rail contracts; grain and grain products represented approximately 14.6% of all contracts on file as of January 1, 1984.

The public information available on grain contracting indicates that contracting activity is widely distributed among railroads. An examination of 115 contracts by the ICC also indicated that contracting activity is widely dispersed among grain firms and has included firms from every part of the agricultural marketing chain, i.e., exporters, processors, feeders, country elevators, merchandisers and farmer cooperatives. Most of the grain contracts have involved rate concessions by railroads in exchange for volume or percent of business commitments by shippers or receivers.[4]

If the increasing use of contracted rail service continues, agricultural shippers could be affected in a number of ways. First, there is some evidence that the relatively stable rate patterns and rate relationships which have existed under tariff-based rail rates become much more variable as contracted rail service expands. In the future, agricultural shippers could be faced with a greater variability in grain rates, due not only to contracted service, but also to the increased flexibility of carriers to change tariff rates on short notice on much of their traffic. Second, an increased use of contracted rail service could thrust many agricultural shippers into the unfamiliar role of negotiating rail service and rates with the railroads in which a comparative advantage for large shippers would appear to exist on the basis of skill, experience, and resources. Finally, although not a participant in a rail contract, a grain shipper could nevertheless be significantly affected by the successful negotiation by a competing shipper. Highly competitive contract rates to a major market for the competitor would place stress on the noncontracting shipper's marketing margin, yet the current disclosure rules, which govern access to the essential terms of the competitor's contract, frustrate the shipper's ability to negotiate a similar agreement with the railroad. There is evidence that some of these effects are already being felt by agricultural shippers in certain marketing areas.

The result of an extensive use of contracted rail service could be an even greater instability in grain marketing and an official sanction of changes in the competitive relationships among agricultural shippers which, in the past under common carrier principles and tariff-based rail services, would have been regarded as unlawful discrimination.[5]

Rural Roads and Bridges

An emerging problem which is already affecting rural shippers is the deteriorating condition of rural roads and bridges and the development of a feasible solution involving the integrated resources of all levels of government: state, local and federal.

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[4]Report on Railroad Contract Rates Authorized By Section 208 of the Staggers Rail Act of 1980, Interstate Commerce Commission, March 13, 1984, p. 11.

[5]See Comments on The Role of Competition in Shaping the Agricultural Marketing System -- Post Rail Deregulation, L. Orlo Sorenson, Discussion paper presented at the Transportation Research Forum, October 22-24, 1984

The economic potential of rural areas is affected by the quality of the transportation infrastructure. Due to recent reductions in rail and air service, however, farmers and other rural businesses now rely heavily upon the road system to get needed inputs in and products out. The productivity of farms and other rural businesses is dependent upon the ability of the rural road system to meet their transportation needs. Inadequate roads add materially to the cost of supplies and products and shorten the useful life of vehicles traveling the road system.

It is not news that America's road system needs attention, with the needed improvements totaling billions and trillions of dollars. Today, however, the financial resources are not available to make all the needed improvements; consequently, priorities are being established by transportation officials and political leaders. Today's financial constaints may mean that some improvements will never be made. It is therefore imperative that rural Americans no longer talk in generalities about the problem but actively participate in the roadway planning and programming process to ensure their transportation needs are taken into account in deciding where and when improvements are to be made.

There are over 3.2 million miles of rural roads, accounting for over 80 percent of the total U.S. mileage. On these roads, the Federal Highway Administration reports there are over 460 thousand bridges 20 feet or greater in length, which is the Federal definition of a bridge. Ninety percent of the rural road system is comprised of local and collector roads, linking farms and other rural businesses to their markets and suppliers.

It is the condition and financing of rural local and collector roads that most affect rural Americans. Often the social impacts of inadequate roads and bridges upon the rural areas cannot be separated from the economic impacts. Most of these roads and bridges are moreover the financial responsibility of state and local jurisdictions of government, although Federal policies do affect the types of investment and levels of service provided at the local level. Consequently, financing decisions, whether revenue-generating or cost-cutting in nature, directly affect the rural residents and necessitate their involvment. It is clear, however, that a combination of actions also involving the Federal government is needed to help local and state governments increase their capacity to maintain the rural road system.

Conclusion

The nation's transportation system appears to have adequate capacity to meet the modest increase in agriculture's needs in the near term future of 1985 and 1986. Agricultural shippers need to become aware of trends in transportation other than the traditional capacity problems which were prevalent during the record export years of the late 1970's and early 1980's. Trends are emerging in transportation which will affect each shipper's ability to reach traditional markets and to develop new markets, which affect the stability of traditional market relationships with competitors, and which involve the publicly-financed rural infrastructure essential to local prosperity and stability. Awareness of these trends is the first step in developing a market strategy to cope in these changing times.

THE EVOLVING U.S. GRAIN TRANSPORTATION SYSTEM

by Morton I. Sosland

Transportation Session
1984 Agricultural Outlook Conference
DOE Auditorium, Forrestal Building
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December 5, 1984

I'm most comfortable in opening my part of this session to go right to a forecast of the future of the grain elevator industry. From a very pragmatic point of view, the sort of grain elevator I'm speaking about _ the large subterminal _ is in the judgment of many authorities the only type of interior elevator that will be able successfully to survive the current and prospective turmoil in the grain industry. I hardly need remind this audience that this turmoil stems primarily from changes in transportation, especially deregulation of railroads. The viewpoint, to which we subscribe, is that only elevators that have somehow managed to take on the characteristics of the present large domestic subterminal have a viable future. Saying it still another way, most of what are today classified as country and terminal elevators that survive and prosper in the year 2000 will have been converted into ''large domestic subterminals;'' and barring that transformation, they will have a very difficult time being in business.

Having presented that forecast, it's advisable first to search for a definition of that survivor, which is not all that easy a task. For most of my career, the domestic commercial grain elevator industry, as distinct from captive elevators adjoining processing plants and port export elevators, has had three parts: country elevators, subterminal elevators and terminal elevators. I want to emphasize that these names largely reflected position (shades, for instance, of ''stocks in all position'' reports) _ whether in the country near the point of production, at what were called subterminal markets beginning quite a few decades, and, third, in what are officially designated terminals.

The principal evolution under way in the U.S. grain distribution system, as it relates to grain elevators, is that the designation tied to position or location has suddenly been changed to a designation oriented toward the use of the facility as a gathering and shipping point. No longer is the essential matter where the elevator is located

but the various alternatives it has for receiving and shipping grain.

Let's now examine how and why a tripartite elevator industry will be changed into an industry where a single sort of facility will dominate. First, let's look at the terminal elevator, and why its future without major change, is doubtful. Terminal elevators were built mainly to serve as the hand-maidens of what is now a nonexistent rail system and also to service the delivery function of the contract futures markets in Chicago, Kansas City and Minneapolis, and also from some time ago, St. Louis. Terminal elevators ''officially'' are, or have been, the elevators located within the switching districts of 15 grain centers chosen by the Department of Agriculture. Besides the four futures-related markets noted previously, the cities where the elevators are officially defined as ''terminal'' are St. Joseph, Missouri, Wichita, Hutchinson, Kansas.; Duluth, Minnesota; Peoria, Illinois; Enid, Oklahoma; Milwaukee, Wisconsin; Omaha, Nebraska; Indianapolis, Indiana; Toledo, Ohio, and Sioux City, Iowa. With a few exceptions, these markets were wheat-oriented, reflecting the dominance of the bread grain in merchandising early in this century when most terminal elevators were built to serve the needs of domestic flour millers.

A major share of the terminal elevator capacity was built by railroads in order to lock in grain business, and a primary disadvantage now is this extreme rail orientation. These terminal elevators have become the dinosaurs of the grain industry. No longer do rail rates or shipping patterns favor terminal elevators as the prime gathering points for grain. Rather, terminals have become residual storage facilities.

I won't spend too much time discussing country elevators, deferring to my fellow panelist assigned that subject. Let me simply note that in our view, the country elevator will also have to undergo a major transformation so as to survive, gaining enough critical mass to serve the needs of farmers requiring ever-rising levels of flexibility in their grain marketing decisions, and to serve grain markets that are shifting and changing in ways that cannot so much be predicted, and must absolutely be accommodated to be the surviving grain elevator, or distribution system. For the country elevator, not only is there mind-boggling change in how grain is moved to markets, but in farmers' own use of local grain storage.

Nothing symbolizes this more powerfully than data showing that while total commercial grain storage capacity increased

by nearly 50% in the 1970-84 period, on-farm grain storage capacity kept right in lock-step. The latest on-farm storage capacity estimate is 11.6 billion bushels, representing 60% of the national total storage capacity near 20 billion bushels. Five or six years earlier, on-farm capacity was 9.4 billion bushels, or 59% of the total that year. Since production and disappearance has hardly kept pace with that pickup in on-farm storage capacity, it is obvious that the country elevator operator not only must contend with searing changes in how grain is distributed, but also must deal with farmers who have elected, for a number of reasons, to hold as much grain as possible on the farm where it is produced.

Having questioned the future of what historically has been called terminal and country elevators, we come to the ''large domestic subterminal.'' To some extent, this kind of facility is a new player in the grain distribution system; ''new,'' that is, in the sense that the role and function of these facilities has substantially changed, mainly by growing in importance to the grain distribution system. It was not very many years ago that subterminals were regarded as country elevators that had outgrown the ''country'' name, because capacity had been increased above some theoretical number, say, 100,000 bushels. Subterminals in long-ago days were points where regional cooperatives or grain companies built larger-than-normal country elevators to assist in assembling grain at harvest, seeking to relieve the pressures of the harvest flow into terminals. Their location in that period in part reflected available transportation, but more often than not was primarily driven by pockets of heavy production.

While data on the flow of grain through subterminals are not available, it can be measured in part by applying a mirror to what's happened to the terminal elevators, and making some allowance for relatively modest changes in the flow through country elevators. In 1970, elevators in the 15 terminal markets had combined storage capacity of 670 million bushels, which was 12% of the commercial grain capacity of 5.6 billion bushels. In 1984, the capacity of the elevators in the same markets is down a tenth from 1970, to around 600 million bushels; yet, in the same period, total commercial grain storage capacity grew 44% to a total of 8.1 billion bushels. The terminal elevator share has shrunk from 12% of commercial capacity in 1970 to 7% today. In one of the most dynamic shifts in the history of the grain business, subterminal elevators probably have picked up all of that five-point terminal elevator share loss and more.

The same pattern may be noted in the flow of grain. In the years immediately after World War II, the 15 terminal markets accounted for more than half the off-farm flow of wheat. The best guess is that the share of the wheat movement through terminal markets is currently less than 20%, and stocks in these markets now represent less than 10% of the total wheat carryover. While comparable data are lacking, it is obvious that the terminal elevators have historically accounted for a much smaller share of the marketward flow of corn, soybeans and other grains than of wheat, and that even from this lower starting point, a marked decline has occurred, while subterminals have gained.

This contrasting trend reflects the obvious, that one sort of elevator, the subterminals, has much more flexibility than the terminal. In the transportation system that has evolved in the wake of rail deregulation, grain merchants absolutely must search for every possible efficiency in movement. And efficiency in movement has to be accompanied by the flexibility to select modes of receipt and modes of shipment. The greater the variety and combination, the greater the chance for innovative efficiency. Terminal elevators, almost by definition, have no choice but rail, while subterminals, for reasons that in many instances are accidental and even unrelated to this force let loose with tremendous power by the enactment of the Staggers Act in 1980, have multiple choices. The subterminal elevator that can receive grain by truck and rail and can ship by truck, rail and barge offers an irresistible number of alternatives, accentuated by the ability to strike deals through contracts and other special arrangements that were unheard of and unthought of at the time the historical grain elevator system was built. It is both the location and the number of competitive modes available on a per-facility basis that is the major issue, not necessarily the number of national transportation companies. Along similar lines, it is our view that while advantages may be derived from a certain mass of grain elevator capacity, the single facility capable of generating substantial volume can, in itself, capture impressive economic power, not just in gathering and shipping grain, but in obtaining transportation economies equal or even superior to that of larger competitors. The grain industry, as a major user of transportation, has an obvious interest in encouraging competition among providers of transportation. At the same time, the leadership of the industry recognizes, based on the grain business's own experience, that an acceptable return on invested capital and on equity is best and most securely achieved within a competitive framework.

Indeed, if there's any real concern among grain elevator operators over the current environment, it flows from efforts within the transportation industry that might tend to restrict or diminish flexibility on a facility-by-facility basis. This explains in large part why important sectors of the grain industry object to the acquisition of barge lines by railroads. The concept of maximum flexibility practically demands that the transportation services available to a facility compete aggressively with each other.

An extremely important issue centers on the means by which country and terminal elevators may be transformed into ''large domestic subterminal elevators.'' In seeking views on this subject, one wag suggested that the answer for terminal elevators is, ''To put them on wheels.'' That, of course, would provide the ultimate in flexibility, but it's also a course unavailable to the grain industry.

Yet, the off-hand remark about ''wheels'' does underscore the fundamental need to maximize the flexibility and efficiencies of each and every location. That can best be achieved by encouraging and stimulating a variety of transportation offerings. In this context predictions are sometimes made that the current transportation scene will eventually lead to ways of ''buying and selling'' transportation services strikingly different from anything the past has prepared us for. I've heard railroad men speak of the possibility of futures-like markets based on pre-selected units of transportation service being offered subject to bid pricing not unlike that witnessed on the floors of commodity exchanges. Some elevator operators would find dealing with such a revolution in the pricing and availability of transportation as a wonderful opportunity; others would view it with alarm. To a great extent, it is part of the revolution accompanying the transportation revolution in grain _ that of electronic communication.

While the first half-decade of Staggers has focused major attention from the grain industry on the competitive elements of a deregulated rail industry, primarily prompting questions about issues like mergers, contract rates, unit trains and line abandonments, it is time that much greater attention be given to the impact of what has been happening on the traditional means of price discovery. As noted, four of the terminal elevator markets were created to serve futures markets, and as the role of the elevators in those centers is sorely diminished by grain movements bypassing terminals, the role of the futures markets themselves is called into question. Answers in instances have been sought in alternative delivery points, but the workability of this

solution is not proved. While changes in the delivery structure must offer the ultimate answer, the exchanges must perceive that the structure which led to their creation is changing; also, that the markets themselves are no longer at the center of the cash grain trade that once provided the base for futures dealings, and vice versa.

The challenge of adapting futures markets to the evolutionary changes in the grain industry is exacerbated by the accompanying shifts in cash grain trading. Just as the terminal elevators have lost their central role, so have the merchants that once existed to service the needs of buyers and sellers in the terminals. The degree of change has been masked by the exceptional successes of a few merchants in modifying their operations to take advantage of the many changes in how grain flows. The neat movement from country, to subterminal, to terminal and then to miller or exporter has been replaced by direct flow of grain from subterminal in producing area to either miller or exporter. It is apparent that neither cash nor futures prices established in any one of the principal markets has the same solidly-based meaning as was the case in the past. It is essential that these changes in the price discovery system be studied and understood so as to assure the system offers the same same validity as in the past.

My focus has been almost exclusively on the meaning of transportation changes for the grain elevator industry and distribution patterns for grain. It has barely touched on cropping patterns, which might eventually be affected on a grand scale, and it only obliquely has examined impacts on flour millers and other food processors. It is significant that millers, probably first of any domestic sector, experienced the effects of major transportation changes both before and after passage of the Staggers Act. Mill location decisions have been radically affected by transportation factors. Even bakers, whose plant site decisions were seldom, if ever, tied to the cost of shipping an incoming ingredient, like flour, have found it necessary to give attention to transportation as a significant cost that can be controlled by smart management of transportation resources.

Increasingly apparent is the emergence of transportation costs and service availabilities as an independent factor in decision-making in the grain and grain processing industry. Transportation pricing and offerings are perceived as moving so swiftly as to have become an unpredictable or difficult-to-forecast element in the traditional demand-supply equation not much different from rainfall in the Ukraine, movement of the dollar in foreign exchange markets, and

credit instability in the developing world. Transportation has always loomed large on the horizon of the grain business; in recent years it has become a force rivaling others and effecting more profound change in the distribution patterns of grain than many expected in the past or even understand in the present.

THE EVOLVING GRAIN DISTRIBUTION SYSTEM--TRENDS AND IMPLICATIONS FOR AGRICULTURE[1]

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Introduction: For this discussion, I wish to identify three types of changes that are significant to developing trends and prospects for the grain distribution system. They are (1) market changes, (2) technological changes, and (3) institutional changes. I will refer only briefly to continuing market and technological changes (although their importance is frequently overlooked) and emphasize more the role of institutional change in bringing about modifications in the grain distribution system.

Market Changes: Export markets have become the dominant markets for U.S. grains that enter the commercial distribution system. This is well known, of course, but is still significant in the slow process of adjustment in the facilities/infrastructure that serves the grain distribution system. Export was not the dominant market when many of the present facilities were built and major storage and processing sites determined.

Specialized grain feeding and grain processing in deficit areas also have led to longer distance movement of a larger part of U.S. grain production than in the past. Development of the broiler industry, increased cattle feeding, and expansion of the flour-milling industry in grain deficit areas are examples. Gradual adjustment to market changes continues in the 1980s.

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[1]Contribution 85-145-A from the Kansas Agricultural Experiment Station, Manhattan.

Technological Changes: Market changes have encouraged technological changes, especially in transportation. Larger-volume movement and longer hauls have prompted adoption of new distribution techniques. The sub-terminal elevator and unit-trains are associated closely with market developments requiring larger volume and long-haul deliveries. Basic economies in all forms of transportation occur when load-unit size increases and continuous movement occurs over a range of distances compatible with the operating cost characteristics of a given mode of transportation. Those economies have become available to the distribution system for grains, especially in export movement through innovative grain handling and transport techniques. New techniques (sub-terminals, unit-trains) were more readily adopted in corn and soybean distribution than in wheat and sorghum for some apparent and perhaps some not-so-apparent reasons.

Barge transport, spurred on by technical improvement and investments in channel development, became increasingly competitive with rail in providing transport for the newer, long-haul distribution system throughout the 1960s and the 1970s.

Institutional Changes: It was in an environment of market and technological change that institutional changes affecting market relationships occurred, principally in 1980. Some change in rules governing transactions in transport markets had occurred even before 1980. Cargill and the Illinois Central railroad had experimented with unit-train shipments as early as 1968. In the 1970's the Interstate Commerce Commission (ICC) reinterpreted its mandate and modified earlier policy on shipper/carrier contracts, minimum annual volume rates, and trainload rates, as well as changes in policy regarding entry into interstate trucking.

New legislation in 1980 (the Staggers Act and the Motor Carrier Act), together with further modification of the regulatory posture of the ICC have changed operating and transactions rules, especially for railroads, to an extent that the market environment for grain marketing agencies has been altered substantially.

The result of regulatory change has been to introduce new dimensions of competition in rail transportation by allowing railroads to compete with each other. Increased ability of railroads to adjust rates also has provided intensified competition with trucks and barges. Railroad grain rates are changed on a selective basis, on short notice, and, in the case of contracts, secretly. Rail service conditions offered to shippers have changed, as have market access conditions for individual shippers.

Events of the 1980s: The forces of change (dominated in the 1980's by changes in institutional rules) have resulted in the following events.

1. Grain transport rates have been reduced. A recent report from the USDA, Office of Transportation states, "In general, rail rates decreased for grain destined for export markets, and some single car rates charged to processors declined as railroads attempted to stay competitive with trucks" (Office of Transportation, p. i).

   Although secrecy of contract rates does not permit complete documentation of the extent of rate changes, analysis of inter-market price spreads and tariff rates provide evidence of rate reductions. For example, in Kansas from January, 1981 through July, 1983, railroad rates on wheat from selected

origins to the Gulf of Mexico for export were reduced by an average 35 percent nominal and 43 percent deflated. Given the level of freight rates in January, 1981, the above reduction is as much as 35 to 40 cents per bushel from some locations, which was reflected in reduced price spreads between to-arrive price at the Gulf and local elevator farm bids. Marketing margins (price spreads minus transport rates) did not increase.

2. The use of shipper/carrier contracts has become widespread, The volume of grain moving under contracts is not known, but in July, 1984, the ICC reported 16,000 shipper/carrier contracts filed since the Staggers Act became effective (Interstate Commerce Commission, p. 1). Grains and grain products contracts previously have been about 14 percent of the total cr, in this case, 2,240 contracts.

3. Stable rate patterns no longer prevail. Although some elements of change in rate structure occurred before 1980, major changes have occurred since then. Contract rate, and other selective, short-notice rate changes have removed the stable structure of transport rates on which the grain distribution system was built. Regional, area, and site competitive relationships have been modified throughout the grain economy.

4. Selective rate changes through special tariff conditions (e.g. minimum annual volume rates) and through shipper/carrier contracts also have changed competitive relationships among grain firms with disregard for conditions that in the past have been considered unlawful discrimination and, in the case of contracts, without sufficient information readily available

to competitors of contracting shippers to decide if legal action to determine discrimination is warranted. Individual shipper contracts and specialized rate conditions are arrived at through negotiation. It is not unreasonable to assume that shippers with the greater negotiating stock, including resources available to commit to the negotiation process, will obtain the better terms.

5. Prescribed rail competition has increased competitive conduct and reduced cooperative conduct among rail carriers. As a result, routing options and market access through rail transport for shippers have been reduced. These restrictions have been enforced through gateway closings; modifying or cancelling of joint rates; selective increases in traffic interchange charges; and changes in transit and other enroute routing opportunities. Market access for shippers has been restricted frequently in the post-Staggers period.

6. Drastic restructuring of the railroad system is occurring. Frequent reference is made to the probability of only six to eight major freight-hauling railroads in the U.S. within a decade. As a result, a severe struggle for market share is occurring among the major carriers. The market-share struggle has resulted in rail mergers, rate restructuring, and a reduced cooperative posture, which have brought about at least some of the limitation in routing and service options for shippers discussed above.

7. Within this environment of change, greater operating freedom for the railroads very likely has increased rail productivity.

Part of productivity increases are passed on to shippers, especially where shipper adjustments are necessary to help achieve increased overall productivity, e.g., modifications in loading facilities or expansion of freight volume through a designated loading or unloading facility.

While existing research has demonstrated that reduced costs for grain marketing firms are quickly reflected in lower price spreads, evidence of the short-run income distribution effects of innovation in the rail system are not as well documented. The declared intent of the Staggers Act was to improve railroad income. Achieving this result through innovation rather than increased charges to grain shippers would appear to be a happy solution to the railroad income problem.

Prospects for the Grain Distribution System: Prospects for grain distribution depend a lot on whether the events described above will continue and become relatively permanent or if they are more in the nature of temporary events related to adjustment to changed conditions. My evaluation is that most will continue. The most critical condition for estimating distribution system prospects is the degree of autonomy retained by railroad management to determine railroad operating conditions and structure of rail service and rates.

On the assumption that regulatory conditions will not be appreciably modified, several trends seem likely. Increased exercise of economic authority by railroads over the performance of grain transportation services that impact grain marketing is likely to occur. Four avenues of exercise of economic power are in progress and likely to continue.

First is the fine-tuning of railroad rates to approach as closely as possible the reservation price of each shipper, gathering to the railroad as much of consumer surplus as possible (it's called charging what the traffic will bear). Second is the structuring of rates to fit the long-term development plans of railroads, e.g., conversion of an area or territory to trainload shipping or for the elimination of a competitor. Third, consolidation of rail systems and rail/barge or rail/truck systems to improve the pricing options of the railroad, and fourth, inter-railroad joint planning activity to maximize rail movement over long hauls.

Changes in rate structure have occurred, and will likely continue for some time, that have modified regional comparative advantage for farmers. I speculate that comparative advantage in cash grain sales has improved in areas of the Central Plains relative to the Corn Belt during the past four years, although one can't be sure without access to contract rate and service information. Whether this will continue to be the case will depend upon market conditions (i.e., growth in West Coast markets) and transport conditions in which rail carriers compete for marketing opportunities in an environment of independent pricing of services. Before Staggers, railroads operating in areas in which there was an absence of competition from other modes at rates approaching railroad costs allowed rates to rise significantly above railroad variable costs. This was the case with grains from Great Plains origins. In the Central Plains where inter-railroad competition is relatively strong, carriers likely have found that demand elasticity is greater when rates are determined independently of the input of other railroads and in competition with them. Whether for

reasons of intra-mode competition, inter-mode, or other competitive reasons, geographically uniform rate changes have not been characteristic since 1980.

For directly competing shippers, selective rate changes resulting in rate improvement for one or more of a group of competitors has caused severe economic hardship for some elevators. Capital values at some sites have dropped sharply as a result of changes in transactions rules in rail transportation markets. The threat that this may occur as a result of a particular competitive strategy in transport markets adopted by a railroad in pursuit of its economic objectives is a discouraging prospect for local elevator managers.

For some agricultural shippers, transportation rate and service advantages apparently derived from successful negotiations appear to be substantial. Shipper negotiations carried on by the well-informed with large trading stakes and transport options are likely to be successful. In grain marketing, these are the larger regional or national firms.

Being well informed results from more than the relative alertness and energy of a manager. It requires assigning resources to information management. Substantial economies of scale likely exist in information gathering and the development of negotiating skills.

The changes in transport conditions generally have placed the independent small local elevator in a bad position. Margins have become uncertain and somewhat more variable than before deregulation. Consolidation of shipping at a more limited number of local points for more economical rail service has changed the nature of local elevator business.

It is difficult for non-trainloading elevators to compete profitably

in long-haul traffic. Some that do not load complete trains will find specialized markets for smaller shipments; others will find specialized truck markets, including trainload shippers; others may integrate with larger firms for purposes of transportation rate negotiations; and some will turn to other pursuits. Negotiating disadvantage and difficulty in dealing with margin fluctuations and market changes suggest fewer long-distance shippers among smaller local firms in the future.

For larger grain firms, railroads likely will become increasingly competitive with other modes of transport. But each railroad will want to maintain control of freight from entrance into the system until it reaches a final market. Reduced interchange opportunities and increased switching charges will encourage retention of traffic by the originating carrier.

Increased margin risk, reduced auxiliary rail services (e.g., transit and a broad range of routing options), and reduced absorption of switching charges in line-haul rates all suggest the need for larger margins for grain firms to cover those additional costs. Cancellation of joint rates also suggests less efficient marketing. We would expect increased costs to be reflected in larger margins for merchandising over separated geographic points.

Comparisons of margins (price spreads minus transport costs) for marketing services from farm delivery to arrival at Gulf Coast ports for Kansas wheat over the period 1977 through 1985 do not indicate increased margins. Lack of margin increase may result because (1) system modification may not have created serious inefficiencies and cost increases, or (2) necessary margin increases required to maintain a longer-term marketing infrastructure in the new environment may not

yet be registered in the market.

Increased costs also are occurring between the harvest field and the elevator purchasing grain for long-distance shipment. Unquestionably, the evolving system involves more local trucking of grain to reach long-distance shipping points. Cost of operating trucks for local services impacts on farmers. Road costs for increased local trucking is largely a public cost where road systems are supported from general tax sources instead of user (largely fuel) taxes.

Summary: Existing market trends, technology, transactions rules, and options in transportation markets appear to me to point to more concentration in control of grain at the local level. This also means a diminished or greatly modified role for many local elevators.

Whether this is a better system than we currently have depends upon the criteria upon which comparative systems are judged. Cost efficiencies from consolidated handling and movement have produced lower cost transportation and storage. Probably there are additional efficiencies to be realized. Freedom of action and choice in a free enterprise system allows continuous adjustment to market forces leading in the direction of longer-term efficiency. Empirical evidence of reduced efficiencies from restricted market access or increased cost of dealing with uncertainties arising from reduced prescription of transaction rules have not yet emerged.

Other criteria that may affect our evaluation of these changes include: (1) the distribution of benefits from lower-cost marketing; (2) effects on related industries, processors or livestock feeders, for example; (3) fairness to participants, i.e., protection from abuse arising from arbitrary action by other participants in the process; and (4) system flexibility in dealing with variations in product flow.

These and other criteria need consideration in establishing the rules under which the system will operate. "They (criteria) can be explicit or implicit, but never absent" (Breimeyer, p. 18).

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MULTIPLE PERIL CROP INSURANCE AND FEDERAL FARM POLICY

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It is indeed an honor to have the opportunity to be a part of the U.S. Department of Agriculture's 1985 Outlook Conference, and share with you my thoughts on the success of the Multiple Peril Crop Insurance Program.

For the past 33 years, I have been involved in the crop insurance business, first providing crop hail insurance to our nation's farmers and, since enactment of the 1980 Crop Insurance Act Amendments, I have been actively involved in

providing Multiple Peril Crop Insurance. In addition, I have had the privilege of serving on the executive committees of our industry trade associations and being the first Chairman of the American Association of Crop Insurers, and presently serve as the Association's Vice Chairman of Government Relations. Our Association is composed of companies, insurance organizations, trade groups, agents associations, and individual agents who believe in the Multiple Peril Crop Insurance Program and are committed to making the Multiple Peril Crop Insurance Program work. We have been committed since we worked for passage of the enabling legislation and we continue our commitment to this program.

The history of crop insurance goes much further back, however, than passage of the 1980 Crop Insurance Act amendments. The U.S. private crop insurance industry has been in business since the late 1800's. We have provided protection on crop hail losses for the last 85 years. Our premium volume on this business has grown from about $2 million in 1900 to an estimated $550 million in this year.

In 1980, the Congress, in a bipartisan effort, passed the Crop Insurance Act amendments. This unleashed the

government's Multiple Peril Crop Insurance Program from its 40-year pilot status to become what we believe is a new direction in the government's agriculture policy -- that Multiple Peril Crop Insurance should be the primary form of federal disaster protection for our farmers and should serve to replace the overlapping and abusive ad hoc disaster programs which have benefitted relatively few.

This bipartisan legislation has provided the private crop insurance industry with a unique opportunity to test an important Reagan philosophy -- the philosophy that the private sector can work with the Federal Government to deliver many services better and more efficiently than can the Federal Government through direct service. We believe that the Reagan Administration has already shown in the Crop Insurance Program that the private sector can work with government to achieve the twin goals of (1) providing the best possible service to our nation's farmers, and (2) providing this service at the lowest possible cost to the American taxpayers.

We believe the government and the private sector have been successful in working together thus far. By applying the private insurance principles and traditions of actuarial

soundness, together with the private insurance companies' tradition of good service for policyholders, we are able to work with the Federal Government, who is our reinsurer and our overseer, and provide the coverage that our farmers can afford. In fact, in many cases farmers cannot afford to do without Multiple Peril Crop Insurance. It has been very difficult for FCIC to change from its 40-year pilot program history where all their insurance was sold by government employees to a joint and cooperative effort with private industry. The private industry has had enormous difficulty in securing the cooperation of ASCS on yield data in some areas. However, thanks to the leadership that FCIC has given, tremendous progress has been made. Frank Naylor, Merritt Sprague, and their associates in FCIC have created a new feeling of good will and cooperation between government and the private sector.

While much remains to be done to provide American agriculture with adequate crop insurance coverage on all crops in every area of the nation, we have made great strides. In 1984 our industry realized a 20% growth in the private crop hail/fire protection that is presently in force and a staggering 200% increase in the Multiple Peril protection. This means that this year there is almost $23

billion of crop insurance protection in force. Our current estimate is that crop insurance protection -- either Crop-Hail or Multiple Peril or both -- is used on almost 40% of the crop acreage in the United States.

It is evident that this growth in protection would not have been possible without the leadership of this Administration, the bipartisan support of the Congress, and a commitment from the agribusiness community to accept the Multiple Peril Crop Insurance Program. We believe the stage is set for the private industry to assume an ever larger role in delivery of this most important program. We believe that if the Administration will demonstrate its belief in the private sector by giving us responsibilities that will utilize private sector capabilities, we can meet Congress's goal of providing crop insurance to all the nation's farmers who want it.

Of course, there will always be a very proper role for the Federal Crop Insurance Corporation. We would not in any way assume that FCIC should relinquish its responsibility for federal audits and oversight to make certain that the taxpayers' dollars are being spent wisely and that farmers are being properly served.

Those of us who are members of the American Association of Crop Insurers have a lengthy experience in serving our nation's farmers. We realize that the Multiple Peril Crop Insurance Program will be fully successful only if the farmers of this nation are properly served. We still have some problems in the crop insurance program and we are aggressively working with the Federal Crop Insurance Corporation to correct these deficiencies. We realize that along with the opportunity for the private sector to deliver a crop insurance program comes a responsibility to deliver a program that will provide adequate protection. We are currently working with the FCIC to develop a plan that will make it possible for the private insurance industry to deliver coverage to farms with a poor credit or poor risk record. In addition, we are working with the FCIC to provide better coverage that more accurately reflects a farmer's actual yield history.

Further we realize that our farmers are independent thinkers and we know that we have a responsibility to educate them to the benefits of the Multiple Peril Crop Insurance Program. We are using broad educational efforts to make them aware of the cash-flow protection they can obtain to minimize their production risk, and are working

closely with them to develop and refine policies that meet their individual needs. We have the tools to do this and we are accomplishing our overall objective.

With that in mind, I would like to expand my remarks to another phase of crop insurance which has received some attention in past years, but which has not been fully examined. That being, income protection/revenue insurance.

The 1981 Farm Bill instructed the Secretary of Agriculture to appoint an income study group to explore the possibilities of farm income insurance. I had the privilege of serving on this task force which concluded its work in June of 1983, and presented its findings to the Committees on Agriculture of the U.S. Senate and the U.S. House of Representatives.

In addition to the task force report, the Congressional Budget Office prepared a report recently relating to the farm risk management options and revenue insurance. This document along with the task force report explored several concepts and plans on how income and/or revenue insurance could work. The reports speak for themselves and are available to the public. My own view is that it is

conceivable, using crop insurance as an underlying coverage, for farmers to effect considerable income protection with the existing devices of futures trading (hedging), options trading, and forward contracting. This could be the forerunner of formalized programs with insurance - like mechanisms.

Whether you agree with this concept or not I feel that income insurance deserves additional research and attention as a possibility of relieving some of the financial plight of the farm community and replacing costly programs now administered by USDA.

In summary, the involvement of the Private Insurance companies in delivering Multiple Peril Crop Insurance to our nation's farmers has resulted in more progress in the last 4 years than in the previous 40.

Currently, private insurance companies are writing 65% of all Multiple Peril Crop Insurance in the U.S. This proves that the American farmer prefers the services provided by private companies even though the cost and coverage is identical to that provided through Federal policies. The essential difference is service.

In closing, in this era of continued farmer distress and concern about future farm policy, private insurance companies stand ready, willing and able to complete the unfinished tasks of:

1. making Multiple Peril Crop Insurance Protection available for all commodities and all farmers;

2. refining and improving existing program coverage;

3. utilizing private company capabilities to provide a broader range of service.

In short, the private insurance companies are willing to do their part of making Multiple Peril Crop Insurance available to all of American Agriculture.

RISKY BUSINESS - FARM STRATEGIES FOR THE MANAGEMENT OF RISK.

OUTLOOK '85

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The capability of many farmers to bear risk is diminished as a result of eroding land values and deteriorating balance sheets. Asset to debit ratios have dropped sharply in recent years.

Operating credit availability is generally determined by repayment capability. Cash flow projections are an integral part of the analysis used by lenders in order to qualify for credit. Any event which has an adverse effect on cash flow has a dramatic impact on the soundness of an operating loan. Crop production losses or lower than expected market prices have an immediate and dramatic negative effect on cash flow.

The management of risks, which have the potential to create financial hardships or failure for a farm business operation, demands an understanding of the various strategies and methods available to the farm manager. Financial success or failure depends on the wise use of the most appropriate tools available to reduce risk. The fact that operating margins are narrow in relation to historical averages accentuates the problem confronting producers. Profit and loss projections turn into disasters when prices turn down or unit costs rise. A unit cost increase will always occur when production fails to reach expectations. Most producers will require a risk management plan that will include the use of a combination of several risk reducing techniques.

The following practices are often used by producers to reduce production risks in their farm operation:

*Diversification of enterprises - produce several different crops with varying planting and harvesting periods. Combine animal or poultry production with crop enterprises. (Harder to specialize; possible reduction of efficiency).

*Disperse the operation - physical separation by distance reduces crop production risks. (Perhaps at the cost of reduced efficiency...Too much road time).

*Maintain surplus capacity in machinery, equipment and labor. Such a practice increases the likelihood of more timely operations, thus higher yields. (This practice increases fixed expenses and reduces efficiency.)

Included in the techniques used to reduce price related risks are:

*Construction of storage capability for non-perishable commodities which extends the time span in which a pricing decision must be made. (There is an added risk of loss during the storage period and added costs to maintain quality.)

*Marketing plans which provide for a fixed quantity to be sold at several different times during the market year. The weekly milk check...A truck load of hogs every month...A sixth of the soybean crop on the 15th of every other month. (May be the only practical plan in the case of perishable commodities but, it's likely to yield less than average returns because prices are typically in the lower third of an annual range for two-thirds of the time.)

*Forward contracting of the cash commodity when prices will result in a profit if production is normal. (This method is preferable to selling at harvest, when the note is due, or when the wife needs a new refrigerator.)

*Participate in government farm programs to stabilize prices. (Generally by reducing supplies and promoting orderly marketing.)

Until recently, few producers have gone beyond these time proven techniques for reducing price and production risks. A few successful farm business managers have already discovered how to effectively manage the risks inherent in production agriculture. Others are beginning to discover techniques which reduce the effect of unfavorable circumstances beyond their control.

Several methods of price insurance are available to producers. The commodity futures contract can be used by a hedger to guarantee a price floor for expected production. Futures contracts are traded on the most widely produced commodities, but, are generally unavailable to the producers of vegetables, fruits, nuts, and many specialty crops.

A producer who chooses to hedge a portion of his soybean crop will phone his commodity broker and order the sale of a 5,000 bushel contract of soybeans for November delivery at an acceptable price sometime after the planting in May. If the futures contract is covered simultaneously with the cash sale of 5,000 bushels of soybeans during the October harvest period, these actions are a true hedge. The change in value of the futures contract will be equal and opposite to the change in value of the cash commodity if the basis is steady.

The basis is the difference in value of a commodity between two locations. Basis is generally expressed in cents per bushel and primarily reflects shipping costs. As a general rule, cash commodities should be delivered on the narrowest possible basis to maximize net returns. Forward basis contracts are available from grain merchants and, if used, will fix the basis at a date prior to physical delivery.

Hedging has some pitfalls. If the futures price moves against the hedger, he must post additional margin to guarantee his contract performance. An adverse upward move of $2.50 per bushel on one 5,000 bushel contract of soybeans would require the posting of $12,500 in additional margin deposits over the initial requirement of about $2,000.

The worst possible position for a Hedger to find himself in is a situation where the price moves against his futures position and then he fails to produce a crop to sell at the higher cash prices. Only a product like crop insurance can minimize this risk. It complements sophisticated marketing plans which include hedging as a risk reducing strategy.

The hedger with storage capability may use the futures market to price his crop over a two year span of time. Contracts are generally available on the 1984 produced crop from September, 1983 to August, 1985. Hedges may be easily lifted (at a probable cost to net returns) when production prospects deteriorate or price prospects improve.

The newest price insurance strategy available is the use of the Agricultural Commodity Options first traded in November 1984. The purchase of a Put option buys the right to sell at a fixed price a standard futures contract on the same exchange. The producer wishing to hedge expected soybean production might, instead of selling a 5,000 bushel November soybean futures contract at $7.00 per bushel, choose to purchase a Put option on the same contract at a $7.00 strike or exercise price.

Put options have a fixed cost and require no additional margins if the price moves adversely. At the same time, a Put establishes a floor or minimum price for expected production. This is achieved without limiting the possible windfall if prices rise in an unexpected manner. The cost of the put option is the premium paid for the price protection purchased.

When harvest time and physical delivery of the soybeans occurs in October, the Put of futures position (if the Put is exercised) is covered simultaneously with the cash sale, providing the then current November futures price is below the $7.00 exercise price. In such a case, the net return to the Hedger is $7.00 less the current basis and less the premium plus commissions paid for the Put option.

On the other hand, if the November futures price rises to levels above $7.00 at delivery time, the Put is allowed to expire and the producer's gross income will be the market value of the soybeans less the cost of the Put Option.

Briefly, let's examine what can happen to profit projections on a typical farm with 500 acres of soybean production.

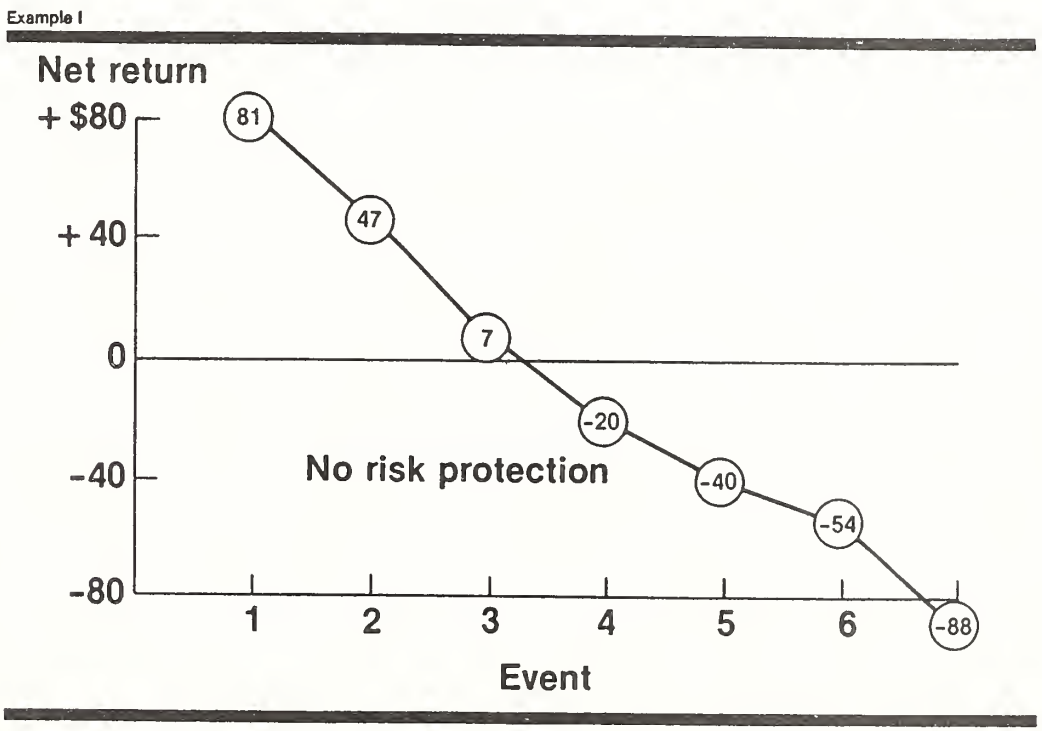
(Example I) Under optimal conditions, assuming the weather man and markets cooperate, yields increase to 50 bushels per acre with steady prices, the net return would climb to $81,000 (Event 1). Normal production of 40 bushels per acre and a $8.44 per bushel price would also result in a net return of $81,000. I think the frequency of either happening reflects why only three percent of the U.S. population is actively farming and even fewer are making money.

If we assume normal production of 40 bushels of soybeans per acre, a $6.75 per bushel price at harvest, and production costs equal to 65 per cent of expected gross income, then, the net anticipated return is $47,000. (Event 2).

Recent trends indicate that the more likely occurrence is lower than expected prices or production problems. Look at what happens if these events occur.

Production remains normal, but prices plunge to $4.75 per bushel. Net return is a mere $7,000 (Event 3) or, the prices are as expected but production is only 20 bushels per acre (half a crop) and the net return is a staggering loss of $20,000 (Event 4). Should both events occur simultaneously, real disaster has struck, with net returns reflecting a minus $40,000 (Event 5).

To carry our farm misery index further, if only 10 bushels per acre is harvested with expected prices, the net loss rises to $54,000 (Event 6). Even $8.75 per bushel soybeans would result in the loss of $44,000. Lose the entire crop and the loss would be $88,000, (Event 7) regardless of the price. ($50.00 a bushel would have no impact on the loss.)



Many producers are unaware that risk protection tools are available which can substantially reduce the risk of negative returns. Combining two of the risk reducing strategies now available would change the previous picture to the following:

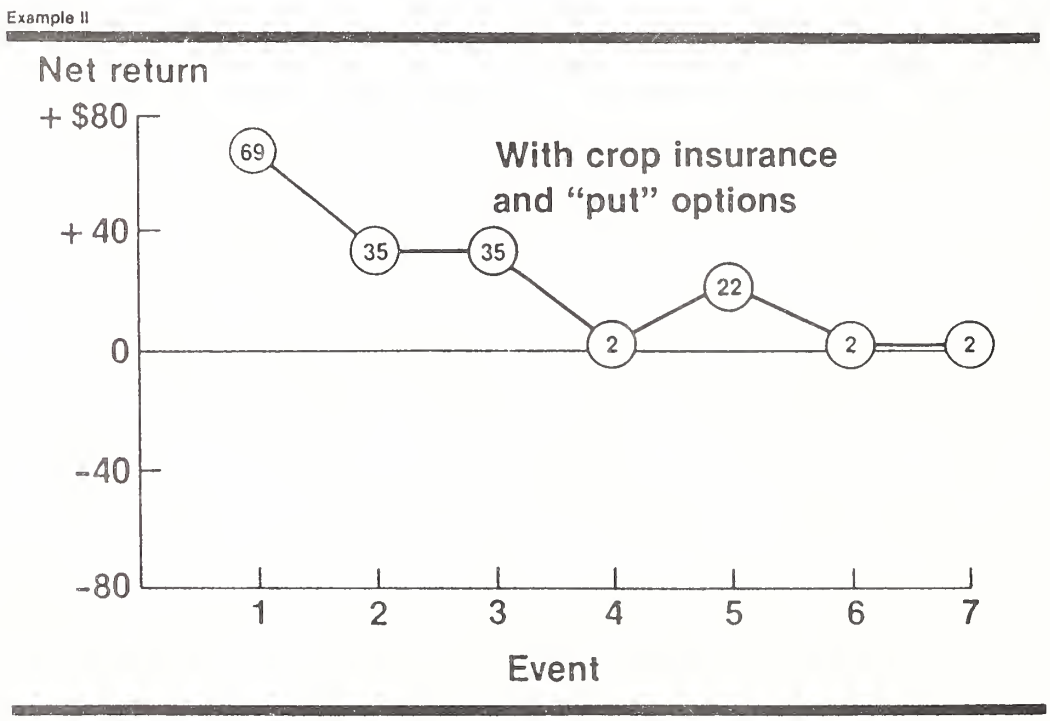
(Example II) Note that despite severe disasters affecting price and production, the wise use of modern risk management techniques keep catastrophic losses from occurring. At a cost? Certainly. Using the same events and assumptions made in the previous example, under optimal conditions, where the unprotected producer nets $81,000, adding risk protection runs about $12,000 a year. Included in this cost are premiums charges for the high options of crop insurance and four Put options on soybean futures contracts. (Event 1)

Net returns with normal production and expected price will also be $12,000 less ($35,000 instead of $47,000) because of the cost of risk protection. (Event 2).

As we shall see, what some would call an unnecessary cost when expectations are met becomes smart risk management when problems arise.

Now, focusing only on the cost and effect of price insurance, adding four Put options to protect the price increases the net return by $32,000 ($40,000 price protection less $8,000 premium for the Puts) when the expected price declines $2.00 per bushel (Events 3 & 5).

The addition of only crop insurance protection increases the net return by $30,000 ($34,000 indemnity less $4,000 premium) when the crop is only 50 percent of expected production; by $64,000 when production is 25 percent of a normal crop; and by $98,000 when a total loss occurs. (Events 4, 5, 6, & 7).



Many possible strategies exist in a sophisticated marketing plan utilizing Put and Call options, Commodity Futures Contracts, and storage capability. Each needs to be evaluated by an analysis of profit or loss and cash flow projections.

Most producers use Casualty Insurance. They insure their cars, machinery, livestock and barns against a host of unlikely events. Many carry million dollar liability policies in addition to health, accident, and life insurance contracts on the entire family. Most producers who purchase these types of insurance are satisfied even though they make few claims. But, somehow, when it comes to crop insurance, the subsidized, tax deductible premium is mentally placed on the input side of the ledger and regarded as unproductive if there is no claim within relatively few years. Producers need to regard crop insurance as a risk management tool, not an ill-disguised income supplement program.

Crop Hail contracts have been widely available for many years and meet one of the greatest needs for protection on many farms.

Nearly one-fourth of America's crops are insured by private companies against hail and fire losses. These specific risk policies are fairly priced because of competition between writers and are relatively simple to administer. The premium rates are based on extensive data collected over 75 or more years.

Relative to hail and fire insurance, Multiple Peril or Federal Crop Insurance is a new insurance product. The Multi-Peril Crop Insurance Program has evolved from an experimental program offered prior to 1981 to the primary source of disaster protection for the American farmer. There has been about a 300 percent increase in county crop programs in just four years. Premium income has risen from about $157 million in 1980 to an estimated $450 million in 1984. The federal crop insurance corporation currently insures 35 different commodities under 19,000 county programs in over 3,000 counties nationwide.

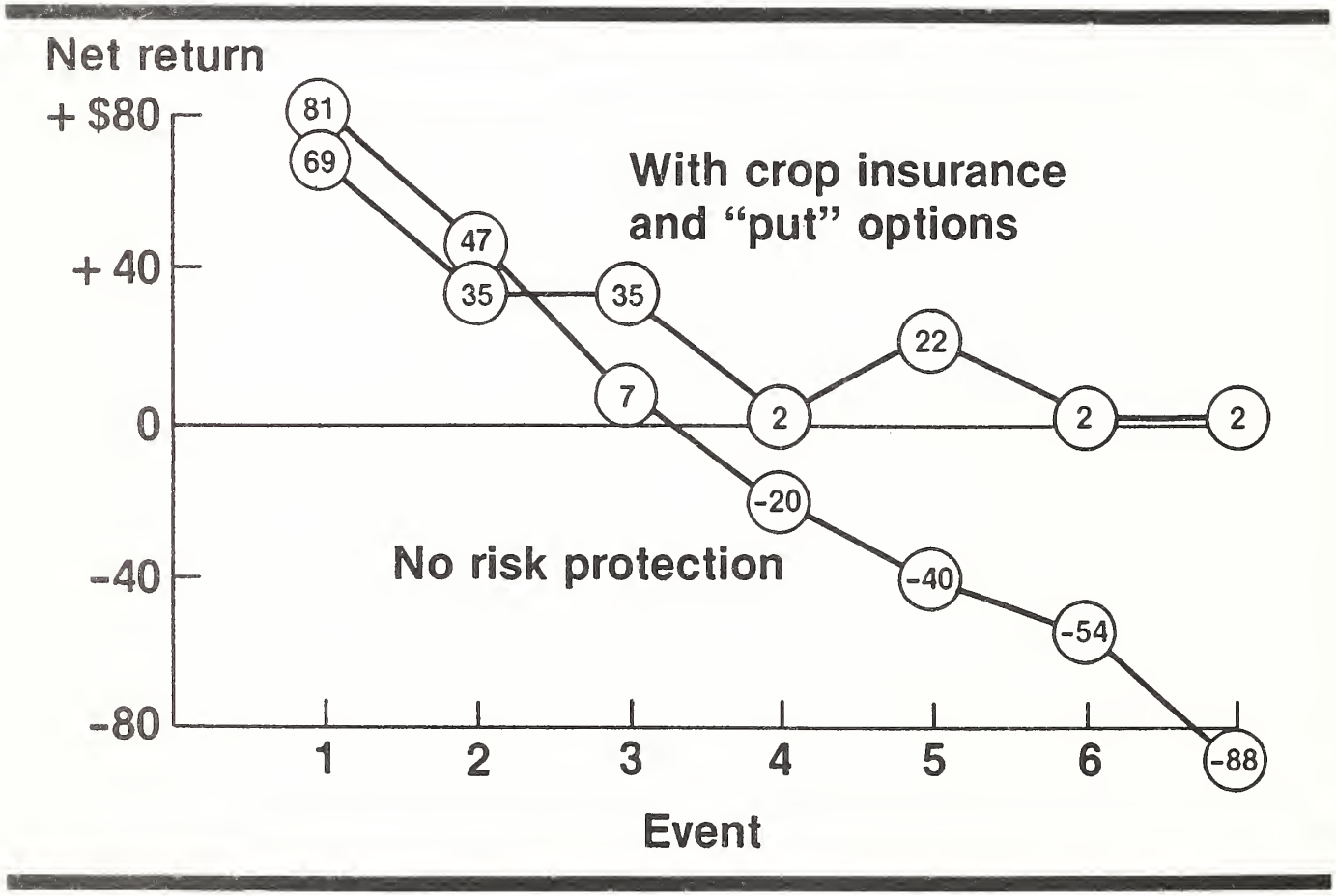
As manager of the corporation, I know that, with Actual Production Histories (APH) serving as the basis of our insurance offer, the Federal Crop Insurance Corporation is now in a position to make an insurance offer which is as good as the farm operation.

The Federal Crop Insurance Corporation and its partners in the private insurance industry are now capable of serving the needs of America's producers in a timely and efficient fashion. The crop insurance contracts have been revised to improve coverage. Premium costs now more fairly reflect the risks protected against. Nearly 50 percent of the total costs of the crop insurance program is contributed by the U.S. Taxpayer in order to encourage the use of insurance as the prime source of Federal Disaster Assistance.

For many producers, crop insurance is a better buy than ever. Higher coverage levels are available for those whose performance exceeds their neighbors and at lower costs. Many producers need to take another look at the improved insurance now available.

The successful businessman operating the farm businesses of the 1990's will have utilized the risk management tools available in the 1980's, in a manner which provides needed protection. Crop insurance is one of those tools - and one of the most significant in many respects. It's judicious use, in combination with other techniques can lead to financial success by reducing the adverse financial effects of production losses beyond the control of good producers.

Tomorrow's successful producers will demonstrate analytical skills in evaluating the profit potential of varying enterprise and marketing plans. They will learn how to manage the risks they assume. The risks in the "risky business" of farming can be controlled. Crop insurance will be a generally accepted business practice of those who succeed.



ECONOMIC DEVELOPMENT AND MARKET DEVELOPMENT IN DEVELOPING COUNTRIES

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Today's headlines seem far removed from market development. The news has been dominated by accounts of starvation and severe food shortages in Ethiopia and other parts of Africa. Once we turn to the measures necessary to avoid a grim repetition of today's African tragedy, the linkages to market development for U.S. agriculture become more apparent, however.

A market of sorts exists for U.S. agricultural commodities even in today's Africa, a market in the form of PL 480 food aid and a commercial market born of stagnating domestic agriculture and country policy distortions that make food imports on commercial terms artifically attractive or politically necessary; that is, as long as foreign exchange reserves hold out. Today, however, I would like to emphasize a larger, more reliable market, not a market dependent on food aid or policy distortions, but on the purchasing power generated by sustained economic development, including agricultural development, in developing countries.

Basic Proposition

The basic proposition I would like to put before you today is that economic development and market development for U.S. agricultural commodities go hand in hand. A corollary proposition is that this can be true even for the lower income developing countries, providing economic development is broadly-based among the population.1/

These propositions are not intuitively obvious. At first blush it might appear that our assistance to help

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1/ I am indebted for much of the analysis that follows to a recent paper by John Mellor, Executive Director of the International Food Policy Research Institute (IFPRI), "The Changing World Food Situation--A CGIAR Perspective," presented to the Consultative Group for International Agricultural Research Meeting, November 7, 1984, Washington, D.C.

countries develop their economies, including their agricultures, would lead to a decline in their demand for U.S. agricultural products.

The Case for Broadly-Based Agricultural Growth

There are good reasons for our agricultural assistance to developing countries expanding, rather than contracting, markets for our agricultural products. These flow out of what may be called "the case for broadly-based agricultural growth."

To begin with, agriculture is the main arena for development in most low-income countries simply because:

(a) such a high share of the population earns its livelihood from agriculture compared to high-income countries; and

(b) there is great scope for raising productivity in agriculture relative to high-income countries.

A second consideration is a universally observed economic relationship; namely, that low-income families and countries spend a higher share of a given increase in income on food than do higher-income families and countries.

Taken together, these considerations mean a sustained acceleration of agricultural growth in low-income countries will have a powerful impact not only on the production but also on the demand for food. This demand impact will be even greater to the extent that the majority of small holder farmers participates in the growth process. This is because lower-income, smaller farmers are more likely than large farmers to spend increased incomes on locally produced goods and services. The additional local employment generated by this demand will in turn stimulate additional demand for food.

As incomes increase, a further boost to the demand for agricultural products is provided by a shift to consumption of livestock products. As this occurs, the relatively fixed supply of traditional livestock feed is used up and cereal feedgrains are substituted. Thus, cereal consumption by livestock rises faster than livestock production.

For all these reasons, development strategy that successfully stimulates broadly-based food and agricultural production growth tends to lead to an even faster rate of

growth of demand for agricultural products and thus for imports of agricultural products.

The Empirical Record

What does the empirical record tell us? It tends to confirm the positive relationship between agricultural growth and agricultural imports by the developing countries. First, it is clear that the developing countries are our most rapidly growing customers for U.S. agricultural products, as shown in Chart I.[2/] Second, countries that have been major recipients of assistance from the U.S. have increased their agricultural imports from us at a faster pace than from other countries, as shown in Chart II.

The record also shows a correlation between high rates of food production growth and even faster rates of food consumption growth and, thus, food import growth. These relationships are suggested by the differences among developing country regions shown in Charts III-A and III-B. These charts also show the particularly rapid growth in animal feed consumption, especially in Latin America and the Near East. The experience of Taiwan provides a dramatic illustration. Taiwan was a net grain exporter in the early fifties. Food production increased very rapidly in Taiwan over the next thirty years, but it now imports sixty percent of all cereals consumed, virtually all in the form of feedgrains.

Finally, the record shows that those developing countries that are the fastest growing producers of staple foods have also expanded their net imports of staple foods at a rapid rate. Between 1961 and 1976, the sixteen fastest growing developing country food producers expanded the volume of their net food imports at over seven percent a year, as revealed in Chart IV.

The experience of another East Asian country, South Korea, provides a striking example of the economic development-market development relationship. In 1981, we exported $2.1 billion in agricultural products to Korea. This exceeded the total amount of PL 480 food aid provided to Korea between 1955 and 1979.

2/ The quantitative data and sources used to construct the charts shown as slides in the oral presentation are given at the end of this paper.

A.I.D.'s Agricultural Assistance Strategy

The Agency for International Development, or AID, is responsible for administering bilateral economic assistance provided by the American Government to more than 80 countries. A major share of our dollar project assistance, about fifty percent or over $1 billion, has as its direct objective the acceleration of agriculture and rural development in recipient countries.3/

The projects funded by this assistance are expected to conform to AID strategy intended to promote broadly-based agricultural development. I would like to highlight two major components of this strategy. Both are absolutely essential to sustained agricultural and market development; neither is sufficient by itself.

The first component is promotion of a country policy environment conducive to broad-based agricultural development. Particularly important are policies that do not distort the production incentives facing farmers and policies that create a positive environment for the growth of the private sector in agribusiness (credit, input, supply, marketing, processing) as well as in farming. Through dialogue with country officials and through technical and financial assistance AID seeks to improve production incentives and private sector opportunities in recipient countries.4/

The second component is support for cost-reducing technology development and transfer in agriculture. Experience has shown that agricultural technology is highly location-specific and that significant investment is therefore required in research and research capacity in developing country settings. The experience of U.S. research institutions, including USDA, universities and private firms, as well as that of the major international

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3/ These are very rough estimates based on FY 85 planning figures for Development and Sahel Assistance and Economic Support Funds (ESF), net of ESF program assistance for budget support and commodity import programs.

4/ The full versions of AID Food and Agricultural Policy and Strategy also highlight support for private enterprise as a separate element, as well as human resource development and the need to integrate the programming of all assistance instruments, including food aid.

agricultural research centers located in developing countries has shown that agricultural research can have an extremely high pay-off. The United States, through AID, has been a main source of support for international centers as well as for strengthening national agricultural research programs.

A combination of policy reform and investment in agricultural research, infrastructure and services, drawing on the international research centers, has produced the sustained agricultural performance of a number of countries in Asia and Latin America.

The Challenge of Africa

I would like to conclude by returning to the current crisis in Africa. In contrast to other regions, food production per capita has been declining in Africa, as shown in Chart V. If this trend is to be reversed and economic and market development are to become realities, the U.S., other donors and African countries must give strong, long-term support to the kind of agricultural development strategy I have just outlined.

While economic policy reforms and encouragement to the private sector are of high priority in a number of countries, sustained progress in Africa will also require concentrated efforts on agricultural technology development and transfer. The task is more difficult in Africa than it has been in much of Asia and Latin America because the natural environment is often more hostile. But we now have powerful scientific tools in biotechnology and genetic engineering that offer new hope in developing more productive crop varieties and strains of animals that can withstand the stresses of this environment.

Long-term support measured in terms of decades needs to be expanded for collaborative research and training networks involving African, international and U.S. institutions focused on priority problems. AID-supported efforts by some of these institutions have already produced promising African varieties of disease-resistant maize and beans, insect-resistant cassava and drought-resistant sorghum.

Next to research and training, the most acute need for public sector investment in African agriculture is probably in rural roads. The existing network is an impediment in Ethiopia and other countries not only to famine relief but also to the widespread supply of modern inputs, volume marketing and other services.

Another important but less-often mentioned factor behind the crisis is the worsening imbalance between the fragile natural resource base and rapid population growth in large parts of Africa. Therefore, support for family planning programs and for reforestation and other natural resource conservation efforts become vital elements of a sustainable African agricultural development strategy.

These requirements for African agricultural development look daunting if not overwhelming. Yet, thirty years ago, much of Asia was considered hopeless economically. Today many Asian countries have become reliable commercial trading partners with the United States. Together, we and African countries know the tools that must be applied to bring about a similar transformation of Africa. Do we have the will?

Charts for "Economic Development and Market Development in Developing Countries"

Chart I

Volume of Agricultural Imports from the U.S., 1965-80
(deflated dollar value)

	1980 (1965 = 100)
By Developed Countries	185
By Developing Countries	280

Source: Arthur B. Mackie, "The U.S. Farmer and World Market Development," USDA/ERS/IED, October 1983, Table 12. Calculated from growth rates.

Chart II

Commercial Agricultural Imports by Selected Countries (26 U.S. assistance recipients), 1969-71/1979-81
(current dollar value)

	1979-81 (1969-71 = 100)
From the U.S.	783
From all Countries	527

Source: From Table 14, same source as for Chart I. The 26 countries are: Algeria, Brazil, Colombia, Dominican Republic, Egypt, El Salvador, Ghana, Hong Kong, India, Indonesia, Iran, Iraq, Israel, Ivory Coast, Jamaica, Japan, Jordan, Kenya, Morocco, Nigeria, Philippines, South Korea, Spain, Sri Lanka, Taiwan and Thailand.

Chart III

Food Production, Direct Food Consumption and Feed Consumption in Developing Countries by Region 1961-77 (deflated dollar value)

	1977 (1961 = 100)		
	Production	Direct Food Cons.	Feed Cons.
Asia	151	165	163 (exc. China & India = 193)
Sub-Saharan Africa	129	149	164
Latin America	165	155	231
		(Total Food Cons. = 177)	
North Africa/ Middle East	151	169	182

Source: Leonardo A. Paulino, "Food in the Third World: Past Trends and Projections to 2000" (draft, Washington, D.C.: International Food Policy Research Institute--IFPRI--1984), Tables 1a and 6a. Calculated from growth rates.

Chart IV

Net Imports of Food Staples by 16 Fastest Growing LDC Food Producers, 1961-76
(deflated dollar value)

1976 (1961 = 100)
288 (Annual Growth Rate = 7.3%)

Source: Kenneth L. Bachman and Leonardo A. Paulino, "Rapid Food Production Growth in Selected Developing Countries: A Comparative Analysis of Underlying Trends, 1961-76" (Washington, D.C.: IFPRI, 1979). Sixteen countries are: Brazil, Colombia, El Salvador, Ghana*, Iran, Iraq, Ivory Coast, Malaysia, Mexico, Morocco, Pakistan, Paraguay, Philippines, Sri Lanka, Sudan, Thailand and Tunisia.

*Ghana will probably be deleted from a revised version owing to data problems.

Chart V

Food Crops Production Per Capita, 1961-77
(deflated dollar value)

	1977 (1961 = 100)
Latin America	108.3
Asia (excl. China)	104.9
Asia	103.2
North Africa/Middle East	100.0
Sub-Saharan Africa	84.0

Source: Table 1a, same source as Chart III. Calculated from growth rates.

U.S. AGRICULTURAL TRADE AND THE DEVELOPING COUNTRIES: OPTIONS AND ISSUES

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Introduction

I appreciate the opportunity to comment on John Eriksson's paper. He makes the very important supposition that U.S. farmers and consumers have benefited from the economic growth and development of the developing countries. I agree. During the 1970's the developing countries were the fastest growing commercial market for U.S. agricultural products. The share of total U.S. agricultural commercial sales to this group of countries grew from 30 to 35 percent over the decade. Research in the U.S. Department of Agriculture (USDA) and elsewhere has shown that the single most important factor underlying this growth has been the rapid rate of economic growth of these developing countries. This research in the USDA has also shown that the current economic difficulties encountered by many developing countries have led to significant reductions in our exports to these countries.

I want to focus my comments on the options and issues we face in helping these countries to become viable economic entities. By viable economic entities I mean these countries have either the capacity to produce sufficient food to meet their domestic requirements, or sufficient foreign exchange to commercially import their food requirements. Specifically, I will address (1) the basic factors that have led to the present difficulties experienced by the developing countries, (2) the alternatives available to the developing countries and the United States for dealing with these difficulties, and (3) a possible U.S. posture for addressing these problems.

Background

Research in the U.S. Department of Agriculture shows a very direct relationship between the economic growth of the developing countries and their imports of agricultural commodities from the United States. Dr. Mackie [1] shows that during the 1979-81 period, a 10 percent increase in the per capita income of the developing countries led to a 13.6 percent increase in U.S. exports to those countries. Other researchers have also found a direct relationship between the economic growth of the developing countries and U.S. agricultural exports to these countries. Schuh [2] points out that the contribution of the developing countries to the export boom of the 1970's was driven largely by increases in per capita income. The World Bank, in its 1984 Development Report [3], projects a high degree of correspondence between the economic growth of the developing countries and growth in the imports of these countries. It projects both the economic rate of growth and the rate of growth in

imports of the developing countries during the 1980-85 period to be only 54 percent of their 1973-79 historical average. The conclusion is clear. The high rates of economic growth enjoyed by the developing countries over the last several decades have benefited U.S. farmers. By the same token, the low rates of economic growth currently forecast for the developing countries are going to hurt U.S. farmers.

The economic outlook for the developing countries for the remainder of this decade, while an improvement over the 1980-84 period, is not bright. During the 1960-73 period the developing countries grew at an annual rate of 6.3 percent, and during the 1973-79 period at a rate of 5.2 percent. Currently, they are projected to grow at a rate of only 2.8 percent during the 1980-85 period. For the 1985-90 period the World Bank [3] projects the developing countries growing at a rate of 5.5 percent if the economic recovery of the developed countries is strong, but at a rate of only 4.7 percent if it is weak. In both cases the projected rate is lower than the historical rate of 6.3 percent achieved in the 1960s. Moreover, if there is not a strong economic recovery on the part of the developed countries, the projected rate is lower than the 5.2 percent rate achieved in the 1970s. Hence, as we look forward to the next decade there are serious problems confronting the developing countries.

Several USDA studies point to the nature of the problem the developing countries face today. Shane and Stallings [4] found that the international debt of these countries has grown at a rate of more than 20 percent a year over the last 10 years, exceeding the growth of both GNP and exports. Also, they found that there has been a trend towards rising debt service problems over the past 20 years, with the magnitude of these problems since 1981 being much larger than anything experienced before.

The increased debt of these countries, coupled with much higher interest rates, has left the developing countries with the dilemma of how to pay for the increased cost of servicing their debts while at the same time paying for the agricultural and investment goods they need to import. The tradeoffs are excruciatingly difficult. To remain financially creditable they must service their debt; to provide their growing populations with food they must import agricultural products; and to develop their economies they must import investment goods such as trucks and tractors. To pay for these items the developing countries must earn foreign exchange by exporting other commodities or by going deeper into debt. Since many of the developing countries cannot go deeper into debt without jeopardizing their financial credibility, their only alternatives are to increase their exports or decrease their imports.

Other research in the USDA points to the dimensions of the problem. In a study of 100 developing countries Shane and Yetley [5] found that 34 countries, accounting for 26 percent of the population of the developing countries, would have to increase exports by at least 20 percent, or decrease imports by at least 20 percent, or some combination of these two, just to pay the interest on their accumulated debt. In a related study, Shane and Stallings [4] found that if the developing countries increased their exports, and/or decreased their imports, so as to be

able to make their annual interest payments on their debt, the accumulated effect of this type of adjustment would decrease the annual rate of economic growth of the developing countries over the 1983-87 period by nearly 50 percent, and the annual imports of agricultural commodities from the United States by 65 percent. At the same time, Taylor and Yetley [6] in another study of 86 countries found that 66 percent of the countries have decreasing food self-sufficiency. In other words, the per capita consumption of food in these countries is increasing more rapidly than the per capita production of food. Clearly, the research shows a number of these countries are in such a severe crisis in that they do not have the capacity to simultaneously (1) service their debt, (2) produce or commercially import their food requirements, and (3) invest in their continued development. This, in turn, translates into a reduction in the growth of U.S. agricultural exports.

The fundamental problem the developing countries face is how to use their limited resources of land, labor, and capital to increase their supply of economic goods at a rate that is as great or greater than the rate of growth in their basic needs for these goods. Because of increasing per capita incomes and rapidly growing populations, the demand for these goods increases at a high rate. Not only do consumers with increasing incomes demand increasing quantities of traditionally consumed commodities, but they demand an ever growing array of new and more sophisticated consumer goods. Electric kitchen appliances become necessities rather than luxuries, private automobiles replace buses as the primary means of travel, and electric power tools replace the hand saw and ax. At the same time, as producers in these countries attempt to increase the supply of these goods, they significantly increase the demand for investment goods such as trucks, farm equipment and the factories that are required to produce the additional consumer goods. Moreover, not only is there a rapid increase in demand for tractors, trucks, and factories in these countries, but the demand for such things as roads, communication systems, and a highly skilled labor force increases rapidly. The money spent on developing such things as transportation and communication systems is referred to as investment in a country's infrastructure. The money spent on such things as training engineers, scientists, and managers is referred to as investment in developing a country's human capital.

As the developing countries grow they encounter a very rapidly growing need for larger quantities of traditional consumer goods, and ever expanding variety of new consumer goods, and an ever growing number of different types of investment goods. If the developing countries are to meet these rapidly increasing needs, they must manage their limited resources of land, labor and capital in the most effective way possible.

Managing a country's trade and international financial transactions is an important aspect of managing its development process. The large and growing investment in machines, factories, infrastructures and human capital, means that a developing country experiences a very rapidly growing demand for capital. Most of this capital comes from the domestic savings of the developing country itself. However, a significant and very important addition to a country's domestic savings

is capital borrowed from other countries. As this borrowing continues it leads to the country eventually having significant amounts of international debt, and as its loans mature, it must repay the money it has borrowed from other nations. The primary mechanism a country has for repaying these loans is to export a part of what it produces and then use the foreign exchange earned to repay its loans. Thus, as a country develops it must not only increase its production of commodities to meet a rapidly growing domestic demand for these commodities, but it they must increase its production of commodities for export in order to earn the foreign exchange needed to repay its international debts.

Options: Their Advantages and Disadvantages

Limited resources, especially institutional and human capital resources, impose severe limitations on the economic growth of the developing countries. These resource limitations mean that countries must choose their options carefully so as to avoid pursuing economic objectives which are doomed to failure because of resource limitations.

Every country, whether it is a developed or developing country, has three fundamental options for developing its economy. One option entails a country attempting to produce all the goods it needs to satisfy its growing demand for both consumer and investment goods. This is a self-sufficiency strategy concentrating on satisfying domestic demands for both consumer and investment through production of domestics supplies of these goods. A country that manages its economy in this manner is said to be pursuing an import substitution development strategy. This means that domestically produced goods are substituted for imported ones as a means of reducing the country's reliance on international trade.

A second option every country has for developing its economy is to produce more than it needs of some goods, then export its surplus of these commodities in exchange for foreign exchange, which it then uses to import goods that it does not produce. A country that manages its economy in this manner is said to be pursuing an export promotion development strategy. This means it satisfies a part of its rapidly growing demand for consumer and investment goods from its own domestic production, and a part through the importation of goods from other countries. This is a development strategy based on trade. It is an unbalanced development strategy in the sense that domestic demands for consumer and investment goods are not balanced by domestic production of these goods. This means that the country must rely on imported goods to meet some of its growing domestic demands for both consumer and investment goods.

A third option each country has for developing its economy is a combination of the two options discussed above. For example, for its agricultural sector a country might pursue an import substitution strategy and attempt to produce all the agricultural commodities it needs, and for its manufacturing sector it might pursue an export promotion strategy where it produces more cars than it needs, exports its surplus, and then imports its airplanes with the foreign exchange earned from exporting its surplus of automobiles. A country that

manages its economy in this manner is said to be pursuing a mixed development strategy. This means it simultaneously pursues a development strategy of self-sufficiency for selected sectors of its economy and relies on its international trade for other sectors of its economy.

The advantage of the self-sufficiency strategy (the import substitution strategy) is that a country does not have to depend on the uncertainties associated with international trade to satisfy its growing demand for economic goods. The disadvantage of the import substitution strategy is that it may be very costly and thus retard the economic growth of the country. The advantages and disadvantages of the trade based development strategy (the export promotion strategy) are just the opposite of those of the import substitution strategy. The advantage of the export promotion strategy is that it makes very efficient use of a country's resources and thus accelerates the economic growth of the country. Its disadvantage is that it must rely on the uncertainties of international trade to satisfy its growing demand for economic goods. The advantage of the mixed development strategy is that it allows a country to simultaneously pursue a self-sufficiency strategy for selected sectors of its economy and an export promotion strategy for other sectors of its economy.

Each country, either intentionally or by default, selects one of these development strategies. Whether the strategy chosen facilitates or obstructs a country's development depends on the country's comparative advantages. If the strategy chosen is compatible with the country's comparative advantages, development of the country will proceed more rapidly and at a higher rate of economic growth than if the strategy chosen is incompatible with the country's comparative advantages.

So far I have discussed the advantages and disadvantages of the different types of development strategies in terms of what they mean for individual countries. Now, what are the advantages and disadvantages of these strategies to U.S. agricultural interests. Clearly, it would not be in the best interest of U.S. farmers to have all of the developing countries pursue strategies of self-sufficiency. If the developing countries were successful in their pursuit of such strategies, it would mean a decline in their international trade and thus a decline in the growth of potential export markets for U.S. farmers. The one potential advantage of such development strategies for the United States would be a reduction in our treasury costs for food aid. While this would benefit U.S. consumers by lowering their taxes, it would not generate income for U.S. farmers.

What are the potential advantages and disadvantages to U.S. farmers of the developing countries pursuing export promotion strategies? The pursuit of this type of development strategy on the part of the developing countries would likely accelerate their economic development and growth. Also, it would provide the developing countries with increasing quantities of foreign exchange which they could use to finance imports. Hence, such development strategies on the part of the developing countries could potentially lead to rapidly growing markets for U.S. agricultural exports. At the same time, a potential

disadvantage to U.S. farmers of the developing countries pursuing export promotion strategies is that they could potentially become competitors with U.S. producers. If the developing countries were to produce more than they need of the commodities that are exported by U.S. farmers, it could mean a reduction in the rate of growth in U.S. exports of these commodities.

Whether the pursuit of mixed development strategies on the part of the developing countries would benefit or harm U.S. farmers depends upon the comparative advantages that these countries have in the production of agricultural commodities relative to the comparative advantage the United States has in producing agricultural commodities. If a developing country has a comparative advantage in the production of wheat, and a comparative disadvantage in the production of soybeans, it should export wheat and import soybeans. If it has no comparative advantage in the production of agricultural commodities, it should export manufactured products and import agricultural commodities. In summary, whether the pursuit of a mixed development strategy on the part of the developing countries would be an advantage or a disadvantage to U.S. farmers depends upon the comparative advantages that developing country farmers and U.S. farmers have in the production of agricultural commodities.

Issues for the United States

The enlightened self interest of U.S. farmers is to have the developing countries become viable economic entities with expanding commercial markets for U.S. agricultural exports. Historically, the United States has had a variety of development assistance programs designed to assist these countries with their economic growth and development. These measures have benefited U.S. farmers in the past. In 1980, imports of agricultural commodities by the developing countries from the United States accounted for 35 percent of the value of total U.S. agricultural exports, and grain imports by these countries were 42 percent of U.S. grain exports. However, the current economic development problems of the developing countries have hurt U.S. farmers. U.S. agricultural exports to the developing countries in 1983 were $1.9 billion less than in 1980, a reduction of 13 percent. Clearly, U.S. farmers have a stake in the economic prosperity of the developing countries, and U.S. policies that influence this prosperity.

A basic issue for the United States is whether it should attempt to influence the types of development strategies pursued by the developing countries. Certainly, the enlightened self interest of U.S. farmers is to have these countries become viable economic entities. Fundamentally, the issue is whether to encourage the developing countries to pursue, through our trade and other assistance policies, self-sufficiency, export promotion, or mixed development strategies. Underlying this issue is the concept of comparative advantage.

It is a country's endowment of land, labor, and capital that determines its comparative advantage. Thus, a country that has an abundance of land relative to its supply of labor and capital will have a comparative advantage to produce commodities that require large amounts of land. Examples include livestock ranching, forestry, and extensively produced

grains such as wheat and rye. Similarly, a country that has an abundance of labor and capital relative to its supply of land will have a comparative advantage to produce commodities that require large amounts of labor and capital. Examples include automobile and computer manufacturing.

The comparative advantages of a country may change over time. The concept of changing comparative advantage is referred to as dynamic comparative advantage. It is a process whereby a country continuously over time refocuses its production capacity on products and commodities that are consistent with the country's changing proportions of land, labor and capital. Hence, whereas a land abundant (capital scarce) country during the early stages of its development will focus on producing livestock, forestry, and extensively produced grains, it will, as it pursues an investment path that is consistent with its dynamic comparative advantage, refocus an increasingly larger share of its production capacity on industries which take advantage of its increasing abundance of capital.

A country that pursues an economic development strategy that is consistent with its dynamic comparative advantage will have a higher rate of economic growth than if it pursues a strategy that is inconsistent with its dynamic comparative advantage. More specifically, this means that the country's land, labor and capital resources are more fully employed and are earning higher rates of return than if the economy were on an alternative growth path. Also, it means that a country is using its resources in a manner that is in the best long-term interests of its citizens. Conversely, if a country pursues an alternative development strategy that is inconsistent with its dynamic comparative advantage, its resources will not be utilized fully nor earn as high a rate of return, and its citizens will be less well off.

Now, why should the American farmer be concerned with dynamic comparative advantage? Quite simply, because the United States, through its trade and development assistance programs, can potentially influence the type of development strategy pursued by a developing country, and hence the country's evolving comparative advantage in agriculture. Some examples will clarify the point. For sake of argument, we will assume that some developing country, it's not important whether its a Latin American, African, or Asian country, has an unrealized comparative advantage in the production of coffee and the comparative disadvantage in the production of wheat. If the United States helps the country develop its coffee industry, and the country produces a surplus of coffee which it exports, it could then use the money earned from the exports to import U.S. wheat. Both the United States and the developing country benefit. U.S. farmers benefit because they are able to produce and export more wheat, and the developing country farmers benefit because they are able to produce and export more coffee. Moreover, the developing country consumer has to pay less for wheat because it can be imported for a lower cost than can be produced locally, and the U.S. consumer has to pay less for coffee because it can be imported for a lower cost than U.S. farmers can produce it. In this case, the United States and the developing country have complimentary comparative advantages. With this type of comparative advantage, all parties in each country gain by each country specializing in the production of the

commodity for which it has a comparative advantage, and importing the commodity for which it has a comparative disadvantage. Now, we will assume a different scenario. Assume that the United States helps the country to develop its wheat industry, and the United States encourages its farmers to produce coffee rather than importing it. In this case, because the country has a comparative disadvantage in the production of wheat, its cost of producing wheat is very high. Consequently, the country must subsidize the wheat producers to produce the amount of wheat needed to meet the country's domestic needs for wheat. Simultaneously, let's assume that the developing country neglects to develop its coffee industry, and as a result, generates no foreign exchange earning which it could use to import wheat. Given this scenario, both U.S. and developing country farmers, and U.S. and developing country citizens, will lose. The wheat produced in the developing country is expensive and costs more than it would if it were imported. At the same time, U.S. consumers must pay more for coffee because it is expensive to produce in the United States. U.S. farmers lose because they are unable to export their low cost wheat to the country, and developing country farmers lose because they are unable to export their low cost coffee to the United States. With this type of development strategy, both countries lose when each country attempts to produce a commodity for which it has a comparative disadvantage.

Numerous scenarios could be addressed in this manner. Two more are of special interest to the American farmer. Assume that another developing country has an unrealized comparative advantage in the production of corn and a comparative disadvantage in the production of livestock. If the United States helps the country to develop its corn industry, and the country then produces a surplus which it exports, it will earn foreign exchange which it could use to import U.S. livestock products. Consumers in both the United States and the developing country benefit because they pay less for both corn and livestock commodities. However, whereas U.S. livestock farmers gain, U.S. corn farmers lose. Thus, for this scenario one group of American farmers benefits, but another group loses. In this case the United States and the developing country have a complimentary comparative advantage in the production of livestock, but a competing comparative advantage in corn. With this type of comparative advantage all consumers gain by each country specializing in the production of the commodities for which it has a comparative advantage, but one group of U.S. farmers loses and another gains. Farmers in the developing country would gain because of their increased capacity to produce low cost corn and their lack of involvement in producing high cost livestock products.

Another scenario of special interest to the American farmer is where a country has an unrealized comparative advantage in the production of selected nonagricultural products, and a comparative disadvantage in the production of selected agricultural products. If the United States helps the country to develop its nonagricultural industries for which it has a comparative advantage, and the country produces a surplus of these products which it then exports, it could then use the foreign exchange from these exports to import the selected agricultural products for

which it has a comparative disadvantage. Both the United States and the developing country benefit. The developing country consumer has to pay less for the selected agricultural products because they can be imported for a lower cost than they can be produced locally, and the U.S. consumer has to pay less for the selected nonagricultural products because they can be imported for a lower cost than they can be produced in the United States. In this case the United States and the developing country have complimentary comparative advantages but with the complimentarity crossing over different sectors of the national economy. With this type of comparative advantage all parties gain by each country specializing in the production of the commodity for which it has a comparative advantage, and importing those commodities for which it has a comparative disadvantage.

The above scenarios have been presented for illustrative purposes only. However, they clearly show that U.S. efforts to influence the economic development of the developing countries can be beneficial to both U.S. and developing country farmers and consumers, or detrimental to one group or the other, or detrimental to both groups. If U.S. efforts to influence the economic development of the developing countries is focused on complimentary comparative advantages, then both U.S. and developing country farmers, and U.S. and developing country consumers, would benefit from the development and trade. If these efforts are focused on competing comparative advantages, then both U.S. and developing country farmers, and U.S. and developing country consumers, lose from the development and trade. In cases where the focus is on activities that are both complimentary and competitive, some U.S. farmers would gain and some would lose, and both developing country and U.S. consumers would gain. Considering that the prospects for healthy economic growth on the part of the developing countries is currently being debated, and that U.S. farm income and U.S. consumer welfare will be effected by whether these countries grow rapidly, slowly, or not at all, it seems appropriate that U.S. agricultural interest take an active part in the dialogue on U.S. efforts to influence the development strategies of these countries. I hope these comments will contribute to that end.

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AGRICULTURAL LABOR POLICY

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There have been many statements made on the differences in perspectives between agriculture in the East and in the West, especially during the last year of the Simpson-Mazzoli Immigration Reform debate and many arguments have ensued.

One of the arguments that disturbs Eastern growers is the implication that West coast fruits and vegetables are somehow more perishable than East coast fruits and vegetables. The East, of course, rejects this argument, particularly as it relates to the idea that the difference in perishability leads to the necessity for a different type of supplemental labor program included in the Immigration package.

I would submit that the differences in perspectives is caused by the differences in recent historical patterns in use and sources of labor, rather than differences in perishability or significant differences in the types of crops grown East vs West. Crops that are perishable on the West coast are just as perishable on the East coast.

There are historical differences in source of labor and patterns in use of labor between East and West. Included would be:

1. Movement of migratory workers for given distances in the East is more complicated than for the same distance in the West because the likelihood of traveling and working in a larger number of different states is greater. Each state has differences in labor laws and regulations; compliance to the various laws and regulations by both multi-state employers and migratory workers becomes more complicated because of these differences.

2. A significant number of East coast growers have had experience with the established H-2 Program, which has been gradually increasing in use (most recently, tobacco in Virginia, lettuce in Florida, and peaches in several Eastern states). The H-2 Program is no stronger to a significant number of Eastern farm employers and, therefore, the use of the H-2 Program as a substitute for illegal workers, if necessary, does not cause the

concern in the East it does in the West.

In the late 1940's, and early 1950's, Eastern growers consciously made the decision to utilize the H-2 legal foreign worker program vs the Bracero program when a supplemental farmworker force was needed. Therefore, when the Bracero program was terminated by Congress in 1964, East coast growers continued to utilize the H-2 Program from the West Indies and it was only when the U. S. Department of Labor promulgated more and more restrictive H-2 regulations that Eastern growers gradually were forced to use increasing numbers of illegal workers. However, in spite of the restrictive regulations, a significant number of growers in Florida sugar cane and over 400 apple growers in 10 Northeastern states continue to utilize the legal H-2 Program. These successful experiences in both perishable and non-perishable crops have influenced the thinking of East coast growers on Immigration Reform supplementary labor provisions.

3. The pattern of usage of workers in the East has been heavily to local workers, southern blacks, Puerto Ricans and legal H-2 workers over the past 3 decades. The East coast does not have all of its labor "eggs in one basket." It has only been in the last half of this period that the increase in use of workers of Mexican descent, including both legal and illegal, has increased to become a significant part of the farm labor scene. Because of this, the use of illegal workers in Eastern agriculture does not approximate the percentage of illegals used in Western states.

4. The amount and intensity of union activity is also different East vs West and this also influences perspectives on agricultural labor policy. Although the East coast has had intensive organizational campaigns waged from time to time going back over 20 years, the campaigns have not had the intensity of the organizing campaigns in California. Unions are present in Eastern agriculture, both in the fields and in the packinghouses and processing plants, but the field activity has not been as intensive or extensive.

Having discussed differences in use and source of labor, how does this affect the Eastern outlook on 1985-86 Agricultural Labor Policy?

Much of what happens in 1985 and 1986 will depend on whether or not the factors that determine the presence of illegal workers in the U. S. will be changed either by Congress or by activities of the Immigration Service.

Much of Eastern agriculture believes illegal immigration must be controlled. A legal work force, including legal supplemental foreign workers, is preferred to a work force which contains illegal workers. Although not a universal position, many believe sanctions on employers are necessary and are willing to "live with" sanctions PROVIDED there is a viable legal supplementary foreign worker program available if domestic workers are not available, and all workers have an easily identifiable work card.

Whether an Immigration Control Law is passed or not, we believe there will be fewer total illegal workers available to agriculture because of increased Border Patrol activity. We, therefore, are attempting to plan and ensure that a legal supplemental work force is available if not enough legal domestic workers can be found. We feel the U. S. Department of Agriculture must play a meaningful role at the national level by representing farm employers' interests with government agencies responsible for the promulgation of laws and regulations dealing with farm labor, including revision of the current regulations on H-2 worker usage so that the use of H-2 workers is a viable alternative to the continued use of illegal workers.

The U. S. Department of Agriculture must continue the quarterly "FARM LABOR" statistics, which it has just recently re-instituted. The statistics are the ONLY reliable means of determining earnings of farmworkers and are necessary in order to ensure domestic and legal foreign farmworkers are earning comparable wages.

From a Policy standpoint, therefore, the U. S. Department of Agriculture should ensure that:

1. It has the resolve, expertise and understanding necessary to adequately represent the perspectives of all farm employers in any federal legislative or regulatory activity affecting farmworkers and farm employers.

2. It continues the "FARM LABOR" statistics on a quarterly basis.

In other areas of agricultural labor policy, we believe the outlook is for increased regulatory activity in all other labor laws and regulations affecting farmworkers and employers. We see increased activity by the Environmental Protection Agency (EPA) in the worker's pesticide exposure question, U. S. Department of Labor and/or EPA activity in field sanitation regulations and U. S. Department of Labor enforcement activity in the Fair Labor Standards Act and Migrant & Seasonal Farmworker Protection Act.

There is an increased need for farm employers to be represented by the U. S. Department of Agriculture at the federal level and to protect themselves through their established organizations at the national, state and local levels.

Agitation for more and more coverage of farmworkers under various labor protection laws will continue even though farmworkers and farm employers are covered by virtually all labor laws and regulations that non-agricultural workers and employers are covered under EXCEPT the National Labor Relations Act (NLRA). Coverage of farmworkers under the NLRA is still highly controversial in Eastern states. Many growers have taken the position that if there is to be a law, it should be federal and NOT state but have not yet reached the point that they universally agree that a federal NLRA for agriculture is necessary.

Although Eastern and Western agriculture may have a different perspective and outlook on Agricultural Labor Policy, there is no reason why all of agriculture should not be able to sit down and attempt to work out a policy which would give the U. S. Department of Agriculture specific direction on how best to represent all farm employers on any specific issue.

WESTERN PERSPECTIVE ON AGRICULTURAL LABOR ISSUES

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I am Vice President of Western Growers Association (WGA), Irvine, California. WGA was founded in 1926 and represents growers and shippers of fresh fruits and vegetables in California and Arizona.

The purpose of my paper is to provide a view of agricultural labor issues from the perspective of western United States producers. Since the producers most affected by labor issues are those in the fresh fruit and vegetable industry, I will confine my remarks to this industry.

Fresh Fruit and Vegetable Labor Requirements

The fresh fruit and vegetable industry has some unique labor requirements of which two stand out. One of the requirements is a very large labor supply because of the industry being highly labor intensive. Probably the most unique labor requirement is caused by the timing of harvesting of highly perishable crops. When highly perishable crops reach the proper stage for harvesting, they must be harvested within a short time period. The short harvest period requires producers to have an adequate labor supply to harvest and the shipper to have an adequate labor supply to pack and handle the harvested crop. Any serious delays in harvesting can cost a producer millions of dollars.

Given this brief background on the uniqueness of labor requirements in the fresh fruit and vegetable industry, the focus will now be directed to farm labor in western United States.

Western Agricultural Labor

Agricultural production in western United States (Arizona, California, New Mexico, and Texas) is very diversified. In California for example, over 250 so-called specialty crops are produced, not including the more traditional crops such as wheat, corn and milo. These specialty crops include the various tree fruits such as peaches, nectarines, plums, cherries, and citrus; and vegetables such as lettuce, broccoli, cauliflower, artichokes, and others. Each specialty crop, as you well know, has its own harvest labor requirements. During several

occasions, the specialty crop industry in California has attempted to hire an adequate number of United States workers. Unfortunately, virtually all alternates resulted in an insufficient number of domestic workers who were willing, able, qualified and available to perform the required tasks. As a result of these failures to attract a suitable supply of domestic workers, producers have hired undocumented workers to fulfill their labor needs. The number of undocumented workers employed varies from State to State, but we estimate as many as 300,000 illegal aliens are employed in western agriculture. In some areas of the four western States, almost 100 percent of a growers' harvest crew may be undocumented, but in other areas, such as the Salinas Valley of California, undocumented workers comprise less than 20-25 percent of the areas' workforce. Some of these undocumented agricultural workers permanently reside in the United States, but many come to the United States temporarily during harvest time and return to their home country.

In addition to the adequate domestic labor supply problem, labor in western agriculture, specifically California and Arizona, is more unionized than any other region in the Nation. The United Farm Workers in California and its affiliate in Arizona have been effective in the past in disrupting harvesting through strikes and work stoppages. To further add to the problems brought on by organizing the laborers, California has enacted an agricultural labor relations law which producers view as particularly onerous (especially the "make whole" and "secondary boycott" provisions).

Briefly, the western agricultural labor situation is one of inadequate domestic labor supply, reliance on undocumented workers, and organized farm labor.

Outlook for Western Agricultural Labor

Immigration reform and control initiatives will have the greatest impact on the labor outlook for western agriculture. As I mentioned, western agriculture has relied heavily on undocumented workers. The western agricultural community is not particularly proud of this fact, but when there are not sufficient domestic workers available, the producers will fill their labor needs with undocumented workers rather than lose their crops. Any effort(s) to eliminate the use of undocumented workers without specific and strong statutory assurances of obtaining alternative workers in sufficient numbers and skill levels in a timely manner will be strongly opposed by western agriculture.

During the 98th Congress, versions of an immigration reform and control bill were passed by both Houses of Congress. The Senate bill contained an expanded H-2 foreign agriculture labor program which the western community thought was unacceptable. After much lobbying effort was directed at House Members, a "guest worker" provision (called the "Panetta-Morrison Amendment") was included in the House-passed bill. However, the guest-worker provision was removed during the House-Senate Conference on the bills. As you know, the 98th Congress adjourned before action on the immigration bill could be completed.

A majority of producers in the western States do not think the H-2 foreign agricultural labor program will be a suitable source of workers for them. This belief is held even though the H-2 program has been successful in Florida and the Eastern Seaboard and to a lesser extent in Arizona. Some of the problems the western producers visualize with a H-2 program are administrative, length of stay, housing, inflexibility, and adverse effect wage rates.

The administrative problems center around length of certification process and increasing demands on the Department of Labor (DOL). It currently takes a minimum of 80 days from time of applying for certification to hire H-2 workers and their arrival at the workplace. Some of the crops have less than an 80-day growing season which means producers would have to estimate their harvest labor needs before their crop(s) were planted. Currently, DOL certifications cover 18,000 - 21,000 H-2 workers each year. If western agriculture is brought under the H-2 program, 250,000 or more workers would have to be certified. How could an already strained processing operation handle an increase of over 10-fold? It would turn into an administrative nightmare. This situation is further aggravated by the negative attitude certification personnel at the DOL have towards agricultural employers and would contribute to delays in the approval process.

H-2 workers can be employed for a maximum of 11 months and then they must return to their home country. While 11 months will satisfy the labor requirements of many producers of perishable commodities, there are some crops such as broccoli that are produced year round. For these year round crops, producers would have to get an exception to the law or have to go through the certification process more than once per year.

Included with the H-2 program is the requirement that employers must provide housing for employees at no cost. This housing requirement would greatly increase the investment and cost of doing business for the employer, especially in the West where housing does not currently exist. One grower in Arizona told us he had to spend over $200,000 to build housing for 450 H-2 workers. This appears to be an expensive burden for housing that may be occupied only a few weeks per year for most specialty crop producers with limited acreage. An exception to this requirement that western growers would consider favorable would be to allow employers to pay the workers a housing allowance and to utilize locally available commercial facilities.

The H-2 program is also employer-specific which means that employees can work for only one employer. This inflexibility could be alleviated somewhat if an association of employers would be the certified employer. If this were the case, employees could transfer from one member of the association to another.

The H-2 program requires employers to pay an adverse effect wage rate (AEWR). The AEWR is the lowest per hour wage rate an H-2 worker can be paid. The Department of Labor annually specifies the AEWR for each State where H-2 workers are employed based on an index of farm wages. In California, wages for agricultural labor range from $3.35 per hour to over $20 per hour, which would seem to pose serious problems in establishing a Statewide AEWR. Western growers especially disagree with the AEWR concept. The non-agricultural foreign workers are not paid an AEWR but receive the "prevailing wage rate" for the area in which they are similarly employed. The current ES-202 methodology used by DOL in calculating AEWR's is being litigated to determine if the methodology is statistically sound. Western agriculture supports the USDA's farm labor survey and continues to urge the DOL to reinstate its use of AEWR's to be used in future wage determinations for foreign agricultural workers. However, a wage rate based on the prevailing wages for similarly employed workers in the same region appears to be the most equitable minimum-type wage if western agriculture is forced into an H-2 or similar type program.

Conclusion

Western agriculture is extremely diverse and has diverse labor requirements ranging from long-term employment to very short-term employment. Regardless of the length of employment, an adequate, trained, and timely labor force is required. In

order to fulfill labor requirements employers have hired undocumented workers because not enough domestic workers could be found who were willing and able to do the work.

Adequate labor supplies are particularly important to producers of highly perishable commodities. In the western United States these highly perishable commodities represent over $8 billion in income to their producers. Therefore, western agriculture, while supportive of efforts to bring under control the seemingly uncontrolled flow of illegal aliens into this country, will continue its efforts to assure whatever proposals are made by the Congress are done so without being highly disruptive to our agricultural industry.

U.S. AGRICULTURAL LABOR POLICY

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OUTLOOK '85

The National Council of Agricultural Employers (NCAE), founded in 1964, is an association of employers and groups involved in labor-intensive agriculture. With members in 36 states, NCAE represents employers who hire approximately 75% of the United States agricultural workforce. NCAE is the only national association which focuses exclusively upon agricultural labor issues.

* * *

During the next 24 months, labor intensive agriculture in the United States will face significant challenges which have the potential to dramatically reduce the availability of harvest labor while forcing employers to adopt more formalized and costly management practices.

Federal regulatory proposals from the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA) in the areas of field sanitation and worker protection from pesticide exposure will likely be approved. Employer compliance with OSHA proposal, expected in February, 1985, may raise labor costs by 2%-5%. EPA is considering apparently sweeping changes in the scope and specificity of its existing regulations (29 CFR Part 170) governing re-entry standards,

for workers following pesticide application, which would impose significant costs on a broad cross-section of agricultural employers.

These regulatory proposals, as well as concerns about increased Labor Department enforcement activity and union organizing in the West, pale, however, by comparison with the impact which enactment of comprehensive immigration reform legislation would have on the industry.

Illegal immigration is one of the most difficult and complicated issues of our time. The Immigration and Naturalization Service (INS) recently reported that more than one million illegal aliens had been apprehended along the U.S. - Mexican border during the last year. National public opinion polls consistently indicate that the American public feels the U.S. has lost control of its borders and that our immigration laws should be strengthened and improved.

For the last four years, the Congress has struggled with this problem in the form of the Immigration Reform and Control Act (IRCA) (also referred to as the Simpson/Mazzoli bill). Senator Alan K. Simpson (R-Wyo.) and Representative Romano L. Mazzoli (D-Ky.), have pursued a comprehensive approach to controlling illegal immigration. If enacted, their legislation would represent the first significant reform of U.S. immigration laws in forty years.

Having twice fallen victim to interest group and partisan politics, proponents of immigration reform legislation believe their time has come. The political constraints which the 1984 Presidential election placed on both parties are gone. President Reagan told 80 million Americans in the second presidential debate that he strongly supports such legislation. Hard-line

opponents including Hispanic groups and civil libertarians seem less inclined to play an obstructionist role in the 99th Congress. In short, aside from continuing concerns about the costs of such legislation, there are now strong indications that Simpson/Mazzoli, or similar legislation, may become public law in in 1985 or 1986.

Employer sanctions are at the heart of the legislation and the controversy which surrounds it. Convinced that we must eliminate the "magnet of employment opportunity" which draws illegal aliens to the U.S., Simpson/Mazzoli would impose civil and criminal penalties against employers who knowingly hire, recruit, or refer for employment an undocumented worker.

After a six-month "grace" period following legislation's enactment, first time violators would be fined $1,000 per indivual. The penalty would jump to $2,000 for second offenders. If a "pattern or practice" of this illegal hiring could be established, an employer would face a criminal mesdemeanor penalty of up to $1,000, 6 month imprisonment, or both. The use, manufuacture, or sale of counterfeit identification documents would result in a felony of up to $5,000, 5 years imprisonment, or both.

Agriculture is the largest single employer in the U.S., hiring 4% of the U.S. workforce and generating 4% of the GNP. Roughly 2.5 million farms produce livestock and commodities worth $150 billion annually.

The U.S. food system is the envy of the world. The average U.S. family spends just 17% of its deposable income on food, whereas in Europe that figure is 25% and in developing countries it is 67%.

Foreign (alien) workers play a significant role in the production of food in this country. It is an historic role, dating back more than a century.

The Alien Seasonal Workforce in U.S. agriculture breaks down into five predominent groups:

1) Immigrants: aliens admitted permanently to live in the U.S. (only 10%-15% of which work in agriculture)

2) Border Commuters: ("green-carders") who maintain a Canadian or Mexican residence but work daily in the U.S. (60,000)

3) H-2 Temporary Workers: roughly 15,000-20,000 working predominently on the East Coast harvesting sugar cane and apples.

4) American migrant workers: whose numbers have steadily declined over the last 20 years but may remain as high as 200,000.

5) Illegal Aliens: the largest component by all government, private, and academic surveys.

Total Agricultural Workforce estimates vary widely because "peak" (harvest) employment can exceed year-round need by a ratio of 20:1. It's clear, however, that "illegal aliens" or "undocumented workers" currently make-up approximately 50-70 percent of the harvest workforce in Western agriculture, where perhaps 300,000 workers harvest crops annually. The largest majority of these illegals work in the short-season, labor intensive, highly perishable fresh fruit and vegetable commodities.

Why this enormous number of alien workers in our economy? The many and varied attempts by agricultural employers to attract domestic workers to perform farm labor have been singularly unsuccessful. Despite generally improved wages and working conditions, American workers remain unwilling to accept such employment for a variety of reasons including:

* The arduous nature of the work;
* The absence of opportunities for mobility;
* Low to moderate pay vis-a-vis unemployment insurance payments and public assistance; and,
* The low level of job esteem.

The Simpson/Mazzoli legislation fundamentally shifts the responsibility for illegal immigration from the employee to the employer through its sanctions provisions. For the first time in this country, employers will be fined substantially and possibly imprisoned for having knowingly hired an illegal alien. Despite widespread speculation to the contrary, all indications are that INS will be prepared to effectively enforce this new law. If that is the case, its sanctions will clearly be an unacceptable cost of doing business.

Labor-intensive agriculture will be faced with an immediate and dramatic labor shortfall, the consequences of which could be devestating for the industry and the American consumer.

The Congress has recognized that a special situation exists with regard to temporary or seasonal jobs in agriculture that history has demonstrated will not be filled by American workers. Congress has further concluded that if the flow of illegal aliens is to be stopped or greatly curtailed through sanctions on employers, there will be an even greater need for agricultural employers to have access to temporary foreign workers when it can be demonstrated that American workers are unavailable.

Thus, Simpson/Mazzoli has contained a set of modifications to the so-called "H-2" temporary worker program, administered by the U.S. Department of labor (USDL). The H-2 program is now pri-

marily utilized on the East Coast but is also used by portions of the Arizona citrus industry. The program allows foreign workers to enter and work in the U.S. for a period not to exceed 11 months. Before any H-2 worker can be employed USDL must certify that U.S. workers are unavailable and that the admission of foreign workers will not "adversely effect" the wages and working conditions of similarly employed Americans.

The H-2 program's existing certification process is costly and cumbersome. The program requires employers to provide free housing, subsidized meals, free transportation and to pay a wage rate, set by USDL, which considerably exceeds the federal minimum wage. While these proposed H-2 modifications would make the program more timely and responsive, Western employers of highly perishable, short-season, labor-intensive commodities have concluded that H-2 will be unworkable under any circumstances and last year gained inclusion of a less-restrictive "guestworker" program in the House version of the legislation.

As I mentioned earlier, the H-2 program presently provides a rather small number of temporary foreign workers (15,000-20,000/yr.) primarily to apple and sugar cane growers on the East Coast. This program is administered in what employers would describe as a hostile manner by the U.S. Department of Labor (USDL), giving rise to an almost endless stream of costly and protracted litigation. It is, quite simply, business under the government looking-glass.

That is not to say that a modified H-2 or similar temporary foreign worker program cannot be made to work [It has, quite successfully, by people like George Sorn in Florida.] Large scale Western involvement (200,000-400,000) in a federally administered temporary foreign worker program, however, will pre-

sent labor-intensive agriculture with an extraordinary challenge.

Under any Congressionally proposed solution, the industry will face significant wage and benefit increases. More importantly perhaps, agricultural employers will face a period of traumatic change as they are forced to abandon a system of largely casual labor management and to develop new and more sophisticated labor practices.

CONCLUSION

While the prospect of enactment of immigration reform legislation clearly dominates the agricultural labor outlook for 1985 and 1986, the industry's concerns are not solely tied to the fate of this legislative proposal.

With or without satutory change in our immigration laws, agricultural employers have already begun to face substantially increased INS/Border Patrol enforcement activity. This will hasten the industry's interest in developing a more stable workforce and may lead to a more widespread use of the H-2 program in the near future.

With or without immigration reform, employers will face expanded and more costly regulation by EPA, OSHA, and other federal regulatory agencies.

With or without immigration reform, there will continue to be a need for improved farm labor wage rate data, which USDA has recently begun to develop.

With or without immigration reform, labor costs as a percentage of production costs will continue to increase for the industry.

Now, more than ever before, the industry is looking to USDA for guidance and leadership. Labor issues are simply far too important to American agriculture for them to be dealt with on an ad hoc basis by USDA.

The time has come to institutionalize labor issues at USDA through proper funding and staffing of the year-old Office of Agricultural Labor Affairs. Absent a solid, long term commitment by USDA to labor issues, the industry's task in neutralizing excessive federal regulation and making the difficult transition to a legal workforce will be greatly exacerbated.

We feel confident that the Department has come to understand the financial importance of these issues to the industry in the months past. We look forward to working with USDA as we meet these fundamental challenges in the months ahead.

OUTLOOK FOR FOOD CONSUMPTION PATTERNS

OUTLOOK '85

Lester H. Myers
Economic Research Service

1985 Agricultural Outlook Conference
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INTRODUCTION

The outlook for food consumption patterns among U.S. consumers must recognize a myriad of different forces which collectively shape consumer purchases. For purposes of this discussion, I shall classify these forces into three general categories: (a.) the economic environment; (b.) socio - demographic trends; and (c.) food marketing industry structural changes and marketing initiatives.

Within the time limitations of this presentation, I would like to briefly outline the major factors affecting food demand within each of these three categories; how we expect these factors to influence food demand in the coming year; and finally to summarize the implications in terms of our expectations for changes in food consumption by major food groups for the next year.

I do not intend to discuss what is probably the major determinant of actual consumption levels; i.e.; commodity production levels for 1985. In the short term, consumption levels are heavily influenced by production levels and demand strength is indicated by the retail price levels which clear the market. The presentation following this one will focus on the outlook for food prices and will include a discussion of the expected prevailing supply conditions.

GENERAL ECONOMIC CONDITIONS

For any given food, the primary economic factors affecting demand are the price of the food, the prices of other substitute foods, and consumer incomes. Beyond prices and incomes, other economic factors also affect food consumption levels. Income distribution is important with respect to the outlook for specific food categories. Employment levels, or unemployment, not only impacts income directly, but consumer expectations as well. As unemployment levels increase in response to economic downturns, consumers tend to feel more uncertain about the future and purchase patterns become more conservative. The money available for food purchases is also affected by changes in costs associated with other components of the consumer's budget. Major items include interest rates, housing costs, and transportation rates. Interest rates may have a different impact depending on whether the household is a net borrower or a net saver. For net savers, higher interest rates will likely result in increases in unearned income and could affect food consumption patterns in a positive manner. Higher interest rates mean higher financing expenditures for those families who are net borrowers. For these families, higher interest rates can result in reduced income availability for food purchases. At

least in the short run, consumers have limited flexibility to offset higher housing and transportation costs by changing their spending patterns within these categories. Thus, for many families, especially within low income groups, food expenditures may represent the most discretionary budget item.

Most economists expect overall economic growth to continue through 1985, but at a lower rate of increase than the 7% real growth rate now expected for 1984. Concensus projections with respect to real GNP and per capita income growth for 1985 seem to suggest conditions similar to 1983 when real GNP rose 3.7% and per capita disposable income, expressed in 1972 dollars, expanded by 2.5%. Compared to 1983, however, there are different expectations regarding some of the other key economic indicators which affect consumer purchases. Unemployment rates are expected to be lower and interest rates are expected to average above 1983 levels. Overall inflation is anticipated to remain moderate with the rate up only from the current expectations for 1984.

By itself, income growth in 1985 is expected to generally have an impact on food consumption similar to 1983 and to be a somewhat less positive force than during 1984. However the fact that unemployment rates are expected to continue to decline slightly implies that consumers will tend to have better expectations about the future of the economy and will be less conservative with their purchase patterns than during 1983. Another factor considered to have an overall positive impact on food consumption is the expectation of stable to only moderate increases in energy costs. This should help moderate increases in housing and transportation costs, as well as representing a positive factor in moderating increases in food production and marketing costs.

Assuming other factors constant, the expected state of the economy during 1985 should have minimal impact on changes in food consumption patterns from that experienced during 1983 and 1984. Within food categories, the moderation in economic growth rates is likely to result in less positive demand growth for the beef, fats, and sugar food categories than during 1984. General economic conditions are likely to represent a more positive demand force, compared to 1984, for poultry, pork, eggs, dairy, and fruits and vegetables. Again, it should be emphasized that actual consumption levels and prevailing price levels will be heavily influenced by production performance.

SOCIO-DEMOGRAPHIC TRENDS

Socio-demographic trends among consumers tend to affect food consumption patterns slowly and systematically over time. Thus, we would not generally expect the outlook for food consumption in any given year to be abruptly impacted by changes in demographic and sociological groups. Nevertheless, it is appropriate to review recent evidence of differences in consumption patterns among various groups and to summarize how these groups are growing or shrinking in importance within the U.S. and to draw some general conclusions regarding implications for positive and negative forces on food consumption patterns.

HOUSEHOLD TYPE

Perhaps one of the most dynamic features concerning the demographic characteristics of American consumers relates to the makeup of households. Between 1970 and 1980, one person households increased 78%; from 17% to nearly 23% of all households.[1/] Analysis of the most current data available as provided by the Bureau of Labor Statistics Continuing Consume Expenditure Survey indicates that single member households spent 36.8% more per capita for total food and 11.6% more for food at home during 1981 than the average for all families. Single person households spent an estimated 6% less for beef consumed at home during 1981 than the average beef expenditures by all households. Per capita expenditures for pork were reported to be 3.4% below the average expenditures for pork. However, this group spent an estimated 10% more than average for poultry and 11.6% more for fish and seafood consumed at home. At home consumption expenditures for cheese where 28.5% higher for single member households than the average. Fruit and vegetable expenditures averaged 32% higher for single member households than the average for all households.

Between 1980 and 1982, single member households grew 5.8% while the total number of households grew 3.4%. The trend toward more single member households is likely to continue and should represent a positive force for poultry, seafood, cheese, and fruit and vegetable consumption. It is not apparent that the beef and pork subsectors benefit from this demographic trend.

Single female parent families with children under 18 years of age increased from 4.5% of the total households in 1970 to 6.7% in 1980. Families in this category spent 26% less per capita for total food and 18% less per capita for food at home during 1981 than average expenditures for all families. Families in this category tend to have lower incomes which, in turn, affects food selection. Expenditures for cereals, processed meats, and fresh whole chicken are higher within this group than the average expenditures for all households.

AGE

In 1982 an estimated 11.6% of the population was 65 years of age and older. By 1990 this group is expected to comprise nearly 13% of the population. At the turn of the century, about 13% will be 65 or older. During 1981, per capita food expenditures for households where the head was over 64 years old averaged 6.1% above the average for all households. Food at home expenditures were estimated at 18.4% above the average. This group tends to spend relatively more for cereal and bakery products, pork, poultry, fish, eggs, and fruits and vegetables. They spend proportionately less for dairy products, processed meats, and beef.

INCOME DISTRIBUTION

In 1981, households reporting incomes of $5000 or less spent an estimated 17.4% less per capita for food than the average expenditures by all households. Food at home expenditures, however, were only 8.2% below

1/ U.S. Department of Commerce, Population Profile of The United States: 1982; Series P-23, No. 130.

the average expenditures by all households. Expenditures within this low income group for poultry and for eggs were higher than average household expenditures. Expenditures for beef and pork were 89% and 85% of all household average, respectively.

Contrasted to the low income pattern, families averaging $30,000 and over spent 29% more than average for food and 18% more for food at home. Beef expenditures were 29% above average, while pork and poultry expenditures were 18% and 15% above the average, respectively. Per capita weekly expenditures for poultry were identical for both the lowest and the highest income groups.

SUMMARY

Socio-demographic trends are difficult to translate into definite implications with respect to food consumption patterns. Many of the socio-demographic groups that are growing most rapidly seem to spend more than average on poultry. However, the impact on other food groups is not as consistent. The new continuing BLS survey will assist researchers and industry staff to more closely monitor consumption patterns and to build a data base for more detailed analysis of the net impact of changes in socio-demographic groups on consumption expenditures by specific food groups.

FOOD MARKETING INITIATIVES

Consumer demand is not independent of marketing and promotion initiatives by food marketing firms and by some agricultural commodity groups. These activities include, but are not limited to, promotion and advertising, new product development, packaging innovations, changes in the services provided by the food retailer, and product proliferation. Some activities, for example services provided by retailers, may be neutral with respect to stimulating the demand for one food group over another but can affect retailing margins and overall food costs. In general it is difficult for economists to quantify the impact of these types of activities. However, there are some developments which, during the coming year, can have some impact on food demand. The three types of marketing initiatives likely, in my opinion, to have the greatest impact are: a). increased advertising by commodity groups, especially dairy; b). the widespread adoption of aspartame (marketed under the NutraSweet brand name) as the sweetener in diet soft drinks; and c). the continuation of a re-structuring of the food retailing sector. I will briefly discuss the key issues for each of these as related to the possible impact on food demand during the coming year.

COMMODITY ADVERTISING

Commodity groups have generally become more active in promoting their products via the use of media advertising, promotions, and merchandising techniques. For example, between 1972 and 1982 the number of associations sponsoring generic advertising increased from 35 to 43.[2]

2/ Morrison, Rosanna Mentzer, Generic Advertising of Farm Products, U.S.D.A., Economic Research Service, Agricultural Information Bulletin Number 481, September, 1984, Page 3.

With respect to influencing food demand during 1985, clearly the increased promotion efforts within the dairy industry have the most potential for significant impact. The Dairy and Tobacco Adjustment Act of 1983 provides for financing and implementing a program to expand the domestic and foreign markets for fluid milk and dairy products. The law mandates a 15 cent per hundredweight assessment from the proceeds of the sale of milk marketed commercially by producers in the 48 contiguous states. The deductions are to be remitted to a National Dairy Promotion and Research Board established to administer the program. The law authorizes the Board to credit up to 10 cents per hundredweight back to qualified state and regional programs intended to increase consumption of milk and dairy products. The funds not credited back to states and regions are to be spent by the National Board for national promotion and research programs.

During fiscal 1984, about 49 million dollars were spent promoting dairy products under national and regional programs, not including United Dairy Industries Association (UDIA) and California - Washington - Oregon (COW) milk marketing program expenditures. During fiscal 1985, national and regional programs are expected to double to 100 million dollars. This understates the actual increase in promotion efforts because it does not account for the extent to which state and regional programs will get extra funding from the 10 cent credit. Without doubt, the dairy program will make this industry one of the leading food advertisers during the coming year.

Most of the increased promotion will emphasize fluid milk and cheese, however ice cream and butter promotion expenditures will also expand significantly. Nutritionally, expect to see an emphasis on promoting the use of dairy products to increase calcium intake in response to recent clinical studies pointing to calcium deficiency problems within certain population groups.

It is not possible at this time to say exactly what degree of influence the increased dairy promotion expenditures will have on consumer food choices and expenditures. Other factors constant, we would expect, based on studies of other generic advertising programs, that the dairy promotion expenditures will be a positive factor for the demand for fluid milk, cheese, and other dairy products during 1985.

PRODUCT DEVELOPMENT

Probably the most dramatic product development factor within the food industry for 1985 relates to the widespread adoption of aspartame as the sole artifical sweetener in diet soft drinks. Two major soft drinks manufacturers have already announced intentions to substitute aspartame for saccharin in all their diet drink formulations. This will not significantly impact food consumption patterns unless new consumers are attracted to diet drinks. Although some groups continue to express concern over the health implications of aspartame use, the extent of concern is probably less than that associated with saccharin use. Also, there are some taste disadvantages with saccharin compared to aspartame. Hence, the adoption of aspartame as the sole sweetener for diet drinks could induce some switching from naturally sweetened drinks. This would, of course, represent a negative factor for sugar and high fructose sweetener use.

The net impact during 1984 is expected to be one of inhibiting the growth of sugar and syrup consumption as opposed to causing consumption declines on a per capita basis.

Asceptic packaging is being adopted to the extent that it will increasingly become a factor affecting the consumption level of some selected food categories. The major impact is likely to be in the fruit juice and drink market. The use of asceptic packages for single serving sizes of fruit juices encourages the consumption of juice as a lunch beverage and industry sources suggest that it is resulting in a net market expansion for natural juices rather than just substituting for juice packaged in some other form.

FOOD RETAILING STRUCTURE

The food retailing industry is undergoing significant changes. These changes are exemplified primarily by two forms of structural adjustment. The most obvious to consumers is the rapid expansion of so called warehouse and super warehouse food stores. These stores are characterized by high volume, low labor costs, and price discounting. The second form of adjustment is the widescale re-negotiation of existing labor contracts by large retailing chains. Both types of adjustment are related. High wage rates and inflexible work rules created an economic umbrella under which the warehouse stores, most of which operate with non-union labor, could enter the market. In turn, the competition from lower cost warehouse stores has forced some of the chains to seek ways to lower operating costs. Since labor represents 50% to 60% of total retailing costs, re-negotiation of labor contracts has become high priority.

The major impact of both developments will be to moderate the inflation in food retailing price margins. The typical warehouse store has gross margins of 12% to 14% compared to conventional supermarket margins of around 20%. While warehouse stores carry 2000 to 10000 items and generally de-emphasize perishables, super warehouse stores carry 10,000 to 18,000 items, have upscale produce, meat, and bakery departments, and realize gross margins of only 13% to 14%.

Current estimates place the number of warehouse stores at about 4000. Of this number, about 100 are super warehouse stores. In total, warehouse store sales account for approximately 10% to 12% of all U.S. grocery store sales, however, their share varies considerably from market to market.

To the extent that these structural changes help moderate the costs of marketing food, they should represent a small positive influence on total food consumption during 1985. The impact, however, will be mainly in terms of prices paid as opposed to changes in food consumption levels.

FOOD CONSUMPTION OUTLOOK

On balance the factors affecting consumer demand for food during 1985 are likely to have positive influences for poultry, cereals, and fruits and vegetables. They are expected to be neutral to slightly negative for beef, dairy, and sugar demand.

As mentioned previously, actual consumption levels will be heavily influenced by prevailing supply conditions. While it is beyond the scope of this presentation to provide details of our outlook for supplies within the various commodity subsectors, I will summarize our estimates of per capita food consumption by major food group. The presentation following this one will provide more discussion of the underlying supply fundamentals and the likely impact of both supply and demand conditions on average consumer prices.

During 1984, per capita food consumption on a retail weight basis estimated to be about 0.6% below 1983. The most significant adjustments are within the dairy and fruits & melons categories (Table 1).

Consumption of fruits & melons during 1984 is expected to be down 8% from 1983. This is primarily due to reductions in the citrus crop as a result of freezes. During 1985, fruit and melon consumption is expected to rebound about 4% to 166 pounds per capita. As with 1984, the 1985 adjustments can be traced to citrus where expected production is expected to partially recover from the effects of last year's freeze.

Dairy products consumption per capita increased approximately 2% in 1983 and is expected to increase another 1.6% during 1984. In 1983, the increase was attributed to large supplies and the impact of free cheese distribution from government stocks. The efforts during 1984 to reduce dairy production and surplus stocks have had no perceptible impact on consumption and/or retail prices throughout most of the year. However, late in 1984 reports of spot shortages of fluid milk in some geographic regions began to surface. Also, some upward pressure on consumer prices is beginning to appear. We expect dairy products consumption to remain high during 1985, but the rate of consumption growth may not match those levels observed during 1983 and 1984.

Beef and veal per capita consumption is expected to decline about 5% during 1985 compared to preliminary estimates for 1984. This is primarily supply related. Especially during the second half of the year, beef production is expected to drop off as the impact of current beef cow and heifer marketings subsides. On the demand side, moderation in consumer income growth will effect beef demand more so than the other meats. Also, broiler production is expected to rebound and cause chicken prices to be relatively attractive compared to beef.

Finally, we expect egg consumption to increase slightly as the industry rebounds from the effects of the avian flu and prices return to attractive levels. Despite the high prices associated with the flu and other factors during the first half of 1984, estimated per capita consumption is unchanged from 1983 levels. Thus, higher production and lower overall prices should stimulate modest consumption expansion during 1985.

Table 1 --Food Consumption, Retail Weight, 1982-1985

Food category	1982	1983	1984p/	1985f/
			Pounds per person	
Total food	1,387	1,417	1409	1425
Animal products	570	582	582	585
Red meats	151	157	152	147
Beef & veal	79	80	79	75
Pork	59	62	61	60
Other	13	12	12	12
Poultry	64	66	67	70
Eggs	33	33	33	34
Dairy products	302	307	310	314
Other	20	20	20	20
Crop products	817	834	827	840
Cereal & bakery	150	151	150	150
Vegetable oils	49	50	48	49
Fruits & melons	156	174	160	166
Vegetables	296	298	299	302
Sugar & sweets	134	136	139	141
Other	32	25	31	32

p = Preliminary
f = Forecast

THE 1985 OUTLOOK FOR FOOD PRICES AND EXPENDITURES

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OUTLOOK '85

Food price rises have been moderate again this year, even though prices and supplies of some foods have fluctuated widely. Food price inflation has substantially lessened in the last five years, reflecting abundant supplies of most foods and the easing of inflation in the general economy which helped hold down the costs of labor and other costs associated with marketing food.

Today I will discuss recent trends in food prices to provide some perspective on the outlook for the year ahead. Next, I will talk about farm prices and marketing costs, factors which determine food prices, and how those factors have influenced the substantial moderation in food price increases. Then, I will talk about food prices and supplies of food commodities this year. Finally, I will bring these factors together in our forecast for food prices and expenditures next year.

Recent Trends in Food Prices

In recent years food price increases have trended downward. Since 1980, when food prices rose 8.6 percent, prices have risen at successively lower rates each year. Last year, food prices rose 2.1 percent, marking the smallest increase since 1967. This year, food prices will rise about 4 percent, double last year's very small increase but equal to the 1982 increase. It also will be the ninth year of the last ten years that food prices have risen less than the general inflation rate.

Table 1--Food Price Indicators

Consumer price index category	Average annual changes from previous year					
	1980	1981	1982	1983	1984p	1985f
	Percent					
Food	8.6	7.9	4.0	2.1	4.0	2 - 5
Food away from home	9.9	9.0	5.3	4.4	4.3	3 - 6
Food at home	8.0	7.3	3.4	1.1	3.8	2 - 5

p=preliminary f=forecast

Price increases have slowed in recent years for both food at home and food away from home. Prices for food at home, representing food purchased in grocery stores, rose 8 percent in 1980, but are expected to rise less than 4 percent this year. Prices for food purchased away from home in restaurants, cafeterias, and fast food establishments are expected to go up about 4 percent this year compared to nearly 10 percent in 1980.

Looking at the U.S. Department of Agriculture's market basket statistics, the underlying cause of food price changes can be seen. The retail cost of the market basket represents domestically produced farm foods sold in grocery stores, and consists of two parts -- the farm value and the farm-to-retail price spread. The farm value represents about one-third of the retail cost. The farm-to-retail price spread is the difference between farm value and retail costs and represents all of the costs incurred in transforming raw farm products into finished foods and making them available to consumers. The market basket does not include imported foods and it does not include fish and seafood.

The farm value of food rose at a decreasing rate from 1980 to 1982, and last year the farm value of food declined 2.2 percent. This trend resulted in part from rising crop production and weak domestic and foreign demand for agricultural commodities resulting from the recession and the loss of some grain export markets. This, coupled with large supplies of livestock products, has depressed farm prices for several years. The farm value of food in 1984 is expected to average between 4 and 5 percent above the 1983 level.

Increases in the farm-to-retail price spread have also slowed in recent years. Since the farm-to-retail price spread accounts for about two-thirds of the retail price of the market basket, smaller increases in food marketing costs significantly moderate the rise in food prices. The farm-to-retail price spread is expected to rise about 3 to 5 percent this year, up from 2.3 percent in 1983, but less than half the rise three years ago.

Table 2--Market Basket Statistics

Category	Relative weight	Average annual changes from previous year					
		1980	1981	1982	1983	1984p	1985f
		Percent					
Retail Cost	100	7.2	7.7	3.6	0.9	4.0	1 - 4
Farm Value	33	5.5	2.8	1.1	-2.2	4.8	-2 - 1
Farm-to-retail price spread	67	8.3	10.5	5.0	2.3	3.6	3 - 5

p=preliminary f= forecast

Food Marketing Costs

The decline in the rate of increase in the farm-to-retail price spread reflects a significant moderation in food marketing costs. Marketing costs are expected to continue to rise at moderate rates through next year.

The food marketing cost index (MCI) measures changes in prices of the principal food marketing inputs including labor, packaging, transportation, and fuel and power. In the first 9 months of this year, the total MCI was 4.4 percent above the same period last year.

About half of food marketing costs are comprised of direct labor costs. With the decrease in the general inflation rate, increases in labor costs have been more moderate. Labor contract settlements in the food industry have included smaller wage and benefit increases, and in some instances, decreases in wages and benefits. Workers have moderated their demands for higher wages and benefits to reduce the risk of losing jobs, particularly in areas where businesses are facing stronger competition and financial difficulty. Cost-of-living increases in existing labor contracts have also been smaller, reflecting smaller increases in the general inflation rate. Additionally, the minimum wage has not increased since January 1981. The labor component of the marketing cost index is expected to rise 3 to 4 percent this year after having risen 10 percent three years ago.

Packaging, transportation, fuel and power, and other marketing costs have risen at a combined rate of 5 percent this year. The strong rate of economic recovery has increased demand for packaging materials, and prices have averaged 10 percent above levels of last year. Transportation rates have also risen this year, reflecting stronger demand for transportation. In contrast, costs for fuel and power have risen only slightly over 1 percent this year. While prices for most energy sources remained steady, electricity rates have increased about 5 percent.

Table 3--Major Food Marketing Costs

Category	Average annual change from previous year			
	1982	1983	1984p	1985f
	Percent			
Food Marketing Costs	5	3	4	3 - 5
Labor	7	4	3	3 - 4
Packaging	-2	2	10	4 - 6
Fuel and Power	5	0	1	1 - 3
Transportation	7	1	4	4 - 6

p=preliminary f=forecast

In 1985, food marketing costs are expected to rise at near this year's rate. Many labor contracts of workers employed in food processing and retailing provide for wage increases in the range of 3 to 4 percent next year. There is no indication of a rise in the minimum wage for next year which covers a large number of the workers in the food service industry. Slower growth in the economy is expected next year which will moderate the demand for packaging and transportation. Energy prices are not expected to increase siginificantly, particularly if OPEC oil prices decline, which seems reasonably likely at this time. Any increase in energy costs will most likely be for electricity.

Food Prices in 1984

Harsh winter weather caused the CPI for food to rise sharply in the first quarter of this year. Bitter cold weather damaged vegetable and citrus crops from Texas to Florida. Market shortages resulted for many fresh vegetables and prices increased. Citrus groves in Texas were heavily damaged from the freeze, killing many trees and seriously damaging others. Oranges for processing in Florida were salvaged, but juice yields were down considerably, pushing up prices for frozen concentrated orange juice. Cold weather in the midwest that disrupted livestock marketings and slowed weight gains for cattle reduced meat supplies early in the year and caused beef prices to go up.

Higher prices for poultry and eggs in the first quarter, however, were not entirely caused by weather. Egg prices rose sharply in the first quarter due to lower supplies. Egg producers had cut production in response to higher feed costs and lower returns and the avian flu further cut supplies and disrupted distribution causing the strong price increase. Poultry producers had also cut production due to higher feed costs and lower returns. Lower poultry supplies pushed prices up significantly in the first quarter.

Since the first quarter, increases in the CPI for food have been small. The major moderating force in the CPI for food has been meat prices. Meat prices carry a heavy weight in the CPI for food because meat purchases account for a large portion of the consumer food budget. Beef production has been bolstered by continued liquidation of cattle herds this year. Beef cow slaughter and other non-fed beef slaughter have been particularly high throughout the year bringing production to about the same near record levels as last year. As a result, prices for beef have declined in each of the last two quarters and will likely decline in the fourth quarter as well. While pork supplies have been slightly lower this year, price rises during the year have been moderate, held down by large beef supplies and declining beef prices. Although pork prices have been rising since the first of the year, the CPI for pork in 1984 will average less than last year. Poultry supplies have also expanded as producers responded to stronger prices. Consequently, retail prices for poultry have also declined in each of the last two quarters.

The CPI for some foods other than livestock products will average higher in 1984. The CPI for fresh fruit has been particularly high this year because of orange prices. Higher orange prices were due to a smaller California orange crop which resulted from tree damage sustained in the

spring floods in 1983. The CPI for fresh vegetables has been falling since the first quarter, but prices for fresh vegetables are above year earlier levels, primarily because of a smaller 1983 fall potato crop that increased prices. Fats and oils prices will average sharply higher this year than last due to shorter vegetable oil supplies after last year's drought. Prices for shortening and margarine have risen the most.

The Outlook for 1985

The CPI for food next year is expected to average 2 to 5 percent above this year's average. Most farm foods are expected to be in good supply. Little, if any rise in farm prices is likely. Food marketing costs, as mentioned earlier, will rise 3 to 5 percent. Consumer demand will be more moderate in 1985, putting little pressure on retail prices. In general, the recent trend in moderate food price increases will likely continue through 1985.

Beef and Veal

Supplies of beef are currently high and are expected to remain relatively high through mid 1985. Slaughter of non-fed beef and beef cows this year, along with heavy placement of heifers in feedlots indicates that producers are cutting back on the size of their breeding herds. This extra slaughter will result in large beef supplies for the next 3 to 6 months. In the long term, however, there will be a smaller base for beef production and supplies of beef will be smaller. The liquidation process takes time, and the effect on retail prices is gradual. The current forecast for retail beef prices next year is for gradual increases throughout the year, as beef production slows down. By the fourth quarter of 1985, retail beef prices will be noticeably higher than now. However, beef prices in 1985 are expected to average only 1 to 4 percent above the 1984 average. As in 1984, beef prices will be a strong force moderating increases in the CPI for food.

Pork

Pork supplies have been large this fall, but supplies are expected to dwindle through the holiday season. Pork supplies in the first quarter of next year will be sharply lower than this quarter. As a result, pork prices may rise sharply after the first of the year. With reduced supplies of competing beef, particularly for use in processed meats, pork prices will remain stronger next year, even though total supplies will about equal this year's. Following the rise in prices this winter, pork prices will remain fairly stable, with only slight increases in the second half of 1985 expected.

Poultry

Poultry supplies are likely to increase next year, and the CPI for poultry is expected to average below 1984. Lower feed prices and the outlook for reduced red meat supplies have been an inducement for producers to expand output. Although prices are expected to be down, returns to producers still seem positive because of lower feeding costs. Poultry prices are expected to average 2 to 5 percent less next year than this year.

Fish and Seafood

The CPI for fish and seafood is expected to rise modestly next year. Strong demand and limited supply for crabs, shrimp, and scallops will keep prices strong next year, and will most likely cause most of the increase. Supplies of tuna and salmon will be ample and prices are likely to remain stable.

Eggs

Egg production has increased substantially in the second half of 1984 and prices have dropped sharply from the very high level of last winter brought about by the avian flu. Prices of eggs will remain fairly stable at current levels through next year, averaging 14 to 17 percent below the 1985 average

Dairy Products

Milk production is expected to rise slightly in 1985 from 1984. Milk production per cow is likely to increase because of lower feed prices and better feeding practices. The CPI for dairy products is not expected to change significantly next year from this year. The farm value of dairy products will be lower in 1985, and therefore any increase in retail prices will most likely be for costs associated with processing and distributing dairy products.

Fats and Oils

The CPI for fats and oils is expected to moderate in 1985. Soybean production is up significantly this year from the drought plagued crop of 1983. With some assurance of good supplies of vegetable oils, the ingredient costs of salad oils and shortening are not likely to increase. The CPI for fats and oils is expected to rise 3 to 6 percent over 1984, however, due to increases in marketing costs.

Fruits

Citrus production is forecast to be larger this season than last year's freeze damaged crops, but will still be below the crop of two years ago. Apple and winter pear production is down from last year. The CPI for fresh fruit will be down seasonally this winter, but will rise sharply next summer as supplies of mid-season and late-season oranges and apples in storage are drawn down.

Processed fruit prices are also likely to rise next year. Packers have bid grower prices up sharply this season in order to replace depleted inventories of frozen and canned fruits. Orange juice production in Florida is expected to be large this season and imports of frozen concentrated orange juice will be larger again this year. Nevertheless, the CPI for processed fruits this year is expected to average 7 to 10 percent above 1984.

Table 4--Changes in Food Price Indicators, 1982 through 1985

	1982	1983	1984	1985 Forecast
Consumer Prices Indexes:		Percent		
All food	4.0	2.1	4.0	2 - 5
Food away from home	5.3	4.4	4.3	3 - 6
Food at home	3.4	1.1	3.8	2 - 5
Meat, poultry, and fish	4.0	-0.7	1.7	2 - 5
Meats	4.8	-1.1	0.4	3 - 7
Beef and veal	1.4	-1.5	1.4	1 - 4
Pork	12.9	-0.7	-1.3	5 - 8
Poultry	-1.8	1.2	10.2	-5 - -2
Fish and seafood	3.6	1.2	3.5	2 - 5
Eggs	-2.8	4.7	10.4	-17 - -14
Dairy products	1.4	1.2	1.4	0 - 3
Fats and oils	-2.8	1.3	9.8	3 - 6
Fruits and vegetables	5.5	0.3	8.7	0 - 3
Sugar and sweets	-0.2	1.9	4.1	3 - 6
Cereals and bakery products	4.5	3.2	4.6	4 - 7
Nonalcoholic beverages	2.8	1.9	2.7	3 - 6

Vegetables

A large fall potato harvest and increased winter vegetable acreage indicate good supplies of fresh vegetables this winter. Assuming normal weather, retail prices of fresh vegetables will average lower next year compared to this year's high prices resulting from the freeze.

The CPI for processed vegetables is likely to remain stable through 1985. Large carryover supplies of many canned and frozen vegetables and prospects of a large pack this year means supplies will be large next year, putting little pressure on retail prices.

Sugar and Sweets

The CPI for sugar and sweets has risen about 4 percent this year. Candy and other sweets accounted for most of the rise. Prices for sugar have been stable this year due to the import quota and fee system which protects domestic producers from the influence of very low world prices. The sugar support price increase will put some upward pressure on retail sugar prices next year, but the increase is expected to be moderate.

Cereal and Bakery Products

The CPI for cereal and bakery products is expected to rise 4 to 7 percent next year. Prices for cereal and bakery products depend strongly on changes in food marketing costs since farm ingredients account for only 12 percent of the total cost. Therefore, marketing costs are likely to be responsible for the expected price increase next year.

Nonalcoholic Beverages

In 1985, nonalcoholic beverage prices will rise moderately. Most of the increase will be due to higher marketing costs. World supplies of coffee are expected to be ample as weather conditions have been favorable

in coffee growing countries. Soft drink prices will also rise, partly due to higher marketing costs and to a small part due to an increase in sweetener costs. Keen competition among soft drink bottlers, however, will tend to dampen price increases somewhat.

Personal Consumption Expenditures for Food

Based on the expected rise in food prices, and a rise in food consumption next year that was discussed in the previous speech, personal consumption expenditures for food will rise this year and next year.

Personal consumption expenditures for food (excluding alcohol) are expected to total $388.4 billion this year, up 6.4 percent from 1983. The increase will result from the expected 4 percent rise in prices this year, some growth in the population, and the continued large growth in away-from-home food consumption. In 1985, personal consumption expenditures are expected to rise 4 to 6 percent. The slightly smaller rise expected in food prices will be primarily responsible for the smaller increase in food expenditures next year.

Table 5--Personal Consumption Expenditures for Food

	Billions of current dollars				
Item	1981	1982	1983	1984p	1985f
Food	326.4	343.5	365.1	388.5	408.0
Food away from home	85.0	91.3	102.5	110.7	114.2
Food at home	241.5	252.2	262.6	277.7	293.8

p=preliminary f=forecast

Disposable personal income (DPI) is expected to rise nearly 9.1 percent this year and many economists are forecasting an increase of about 8 percent in 1985, considerably more than the rise in food expenditures. Consequently, the percentage of income spent on food will decline to 15 percent this year and 14.6 percent in 1985.

Table 6--Percent of Income Spent on Food

	Percent				
Item	1981	1982	1983	1984p	1985f
Food	16.0	15.8	15.6	15.0	14.6
Food away from home	4.2	4.2	4.4	4.3	4.1
Food at home	11.8	11.6	11.2	10.7	10.5
DPI (Billion current $)	2041.7	2180.5	2340.1	2599.0	2799.1

p=preliminary f=forecast

PESTICIDE AND FERTILIZER OUTLOOK FOR 1985

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OUTLOOK '85

ABSTRACT

U.S. farm demand for pesticides on major field crops could range from 500 to 545 million pounds (a.i.) in 1985 compared to 505 to 510 million pounds in 1984. Current projections are that crop acreages will be similar to, or up slightly from 1984 levels. Pesticides supplies appear to be adequate for the 1985 growing season. Pesticide prices quoted by manufacturers are projected to be unchanged for herbicides, but down 3 percent for insecticides and 1 percent for fungicides. No dramatic changes in fertilizer consumption, supplies, or prices are projected for 1984/85.

INTRODUCTION

Pesticide use by farmers, primarily the use of herbicides, grew rapidly during the 1970's. In 1971, farmers used 207 million pounds (a.i.) of herbicides in the production of major field and forage crops. By 1982, the use of herbicides had grown to 455 million pounds (a.i.). Insecticide use totaled 126 million pounds (a.i.) in 1971 and 130 million pounds (a.i.) in 1976. In 1982, farmers applied 71 million pounds (a.i.) of insecticides a substantial drop from 1976. Most of the decrease in insecticide use occurred in cotton production where farmers have switched to synthetic pyrethroids, which are applied at rates as low as 0.1 pounds (a.i.) per acre. Use of traditional cotton insecticides (EPN, methyl parathion, and toxaphene), applied at rates of 0.5 to 2.0 pounds (a.i.) per acre, dropped substantially between 1976 and 1982. Fungicide use between 1971 and 1982 ranged from 6 to 8 million pounds (a.i.) annually.

PESTICIDES

Pesticide use is directly affected by crop acreage planted and climatic conditions prevailing during the growing season. Actual 1985 crop acreage will be determined mostly by market developments and farmers' participation in commodity programs. Current projections are that crop acreages will be similar to 1984 levels or up slightly.

U.S. farm demand for pesticides on major field crops could range from 500 to 545 million pounds (a.i.) in 1985 (table 1). This compares to an estimated 505 to 510 million pounds (a.i.) of pesticides used in 1984.

Herbicide use could range from 430 to 470 million pounds (a.i.) in 1985. Corn production will account for 55 percent of the herbicide use followed by soybeans at 28 percent. In 1982, 95 percent of the corn acreage and 93 percent of the soybean acreage was treated with herbicides.

Table 1--Estimated pesticide demand for U.S. field crop farmers

Crop	1984 planted acreage	Projected 1985 use		
		Herbicides	Insecticides	Fungicides
	Million	Million pounds (active ingredients)		
Row:				
Corn	79.8	238 - 256	29.4 - 31.7	.07
Cotton	11.0	16 - 17	15.3 - 16.8	.16
Grain sorghum	16.2	14 - 16	2.3 - 2.6	0.00
Peanuts	1.6	4 - 5	.9 - 1.0	5.50
Soybeans	68.2	119 - 130	10.4 - 11.4	.07
Tobacco	.8	1 - 2	2.8 - 3.3	.35
Total	177.6	392 - 426	61.1 - 66.8	6.15
Small grains:				
Barley and oats	24.2	6 - 7	.1 - .2	0.00
Rice	2.9	14 - 16	.5 - .6	.07
Wheat	79.5	17 - 19	2.4 - 2.6	.93
Total	106.6	37 - 42	3.0 - 3.4	1.00
Total	284.2	429 - 468	64.1 - 70.2	7.15

Insecticide use in 1985 is forecast at 65 to 70 million pounds (a.i.). Corn farmers are expected to apply about 30 million pounds of insecticides primarily for corn rootworn larvae control. Between 1971 and 1982, farmers treated 35 to 40 percent of the planted corn acreage annually.

Insect control is important in cotton production and in the southern soybean producing areas. The extent of insecticide use on these crops in 1985 will depend on the size of overwintering insect populations and how climatic conditions during the growing season affect insect reproduction.

Supply

Total pesticide supplies available for domestic use in 1985 are projected to be down 1 percent from 1984 (table 2). This estimate does not include imports. Production is expected to be up 9 percent, but the inventory carryover into the 1985 season is expected to be down 18 percent from a year earlier. Exports are projected to be up 6 percent in 1985, but will be strongly influenced by the strength of the dollar.

Herbicide supplies in 1985 are forecast to total 680 million pounds (a.i.), down 4 percent from 1984. Supplies will be adequate to meet major field crop use, which is projected to range from 430 to 470 million pounds (a.i.). Insecticide supplies are projected to be up 11 percent, and fungicide supplies up 4 percent.

During the 1984 crop season, manufacturers substantially reduced their inventories by amounts ranging from 16 percent for herbicides to 43 percent for fungicides. As a result, manufacturers expect to increase production for the 1985 crop season--herbicides by 5 percent; insecticides by 17 percent; and fungicides by 27 percent.

This increased output will raise overall plant capacity utilization rates to 70 percent for the 1985 production year compared to rates in the 50-percent range in 1983 and 1984. The PIK program announced in January 1983 caught pesticide manufacturers by surprise. Their production plans were made several months earlier, and even though they reduced output during the remainder of the year, inventories had built up to high levels going into the 1984 crop season.

Herbicide producers are expected to operate at 74 percent of capacity in 1985, a substantial increase over 1984. Insecticide producers plan to operate at 59 percent capacity, compared with 30 to 35 percent in 1983 and 1984. Operating capacity for fungicide producers is expected to be down slightly, but still similar to 1980-83 levels.

Table 2--Pesticide production, inventories, exports, and net supplies

Item	Quantity (active ingredients) 1/		
	1984	Projected 1985	Projected change, 1984-1985
	Million pounds		Percent
Herbicides:			
Production	560	586	5
Inventory carryover	268	226	-16
Exports	122	132	8
Domestic supply	706	680	- 4
Insecticides:			
Production	172	202	17
Inventory carryover	63	52	-17
Exports	69	.70	1
Domestic supply	166	184	11
Fungicides:			
Production	52	66	27
Inventory carryover	21	12	-43
Exports	27	30	11
Domestic supply	46	48	4
All pesticides:			
Production	784	854	9
Inventory carryover	352	290	-18
Exports	218	232	6
Domestic supply	918	912	- 1

1/ Production for surveyed producers only. These firms produce a major portion of all U.S. farm pesticides.

Source: USDA survey of basic pesticide producers, October 1984.

Prices

Pesticide prices quoted by manufacturers in 1985 are projected to be unchanged for herbicides, but down 3 percent for insecticides and down 1 percent for fungicides (table 3). These are aggregate prices and do not reflect price changes for individual products. At the farm level, herbicide prices declined an estimated 6 percent from May 1983 to May 1984, led by sharp reductions in prices for atrazine, trifluralin, and 2,4-D. Farm-level insecticide prices also dropped substantially between 1983 and 1984, primarily due to declines in synthetic pyrethroid prices. Fungicide prices have been quite stable in recent years.

FERTILIZER

No dramatic changes in fertilizer consumption, supplies, or prices are anticipated in 1984/85. U.S. fertilizer consumption reached a record high in 1980/81 then declined about 23 percent in the next 2 years (table 4). Fertilizer consumption rebounded in 1983/84 as crop acreage increased after the 1982/83 PIK cutback. A leveling off in crop acreage and small increases in crop prices will keep 1984/85 plant nutrient use close to 1983/84 levels.

Prices

Generally, fertilizer prices have followed a pattern similar to fertilizer consumption. Fertilizer prices stabilized or declined as consumption dropped in the 1981/82 to 1982/83 period. With the recovery in fertilizer consumption during 1983/84 overall fertilizer prices in May 1984 were 7 percent higher than 1983 prices (table 5). Overall, Spring 1985 fertilizer prices should show only a small advance over 1984, as fertilizer prices reflect a relatively stable supply-demand situation.

Nitrogen prices increased in the Spring of 1984 with higher fertilizer sales and a tightened supply situation. The supply picture was not clear as domestic anhydrous ammonia producers with idle capacity waited for prices to rise before restarting their plants. Without additional domestic production, a tight supply situation in 1984 was possible as supplies available through imports would be hard pressed to meet increased U.S. farm needs for nitrogen fertilizer.

Table 3--Pesticide price changes

Item	1982-83 1/	1983-84 1/	Projected 1984-85 2/
		Percent	
Herbicides	-4	-6	0
Insecticides	8	1	-3
Fungicides	3	NA	-1

1/ Weighted average May prices paid by farmers.
2/ Quoted manufacturer prices.

Source: USDA annual survey of basic pesticide producers.

Table 4--U.S. fertilizer consumption

Year	Plant nutrients			
	Total	Nitrogen	Phosphate	Potash
		Million short tons		
1980/81	23.7	11.9	5.5	6.3
1981/82	21.4	11.0	4.8	5.6
1982/83	18.2	9.2	4.2	4.8
1983/84 1/	21.1	10.8	4.7	5.6
1984/85 1/	21.5	11.0	4.8	5.7

1/ Forecast.

Table 5--U.S. Fertilizer Prices

Year and month	Price index 1/	Anhydrous ammonia	Urea	Nitrogen solutions	Triple superphosphate	Muriate of potash
			Dollars per ton			
1981						
May	147	247	245	149	249	155
October	144	249	247	152	229	155
1982						
May	146	255	235	146	228	155
October	141	236	228	147	216	146
1983						
May	138	237	213	141	214	143
October	134	226	208	136	205	128
1984						
May	147	280	227	143	231	147
October	141	259	228	143	210	134

1/ 1977 = 100.

Uncertainty concerning natural gas prices, nitrogen fertilizer production costs, and longer term fertilizer prices delayed the reopening of idle production capacity. This caused prices of anhydrous ammonia to increase sharply. However, the rise in nitrogen fertilizer prices was abruptly terminated during the Spring of 1984 when weather-delayed planting allowed supplies to build. Thus, nitrogen supplies that were tight became abundant. Consequently, nitrogen prices increased sharply from December 1983 to March 1984, but leveled off in May and June, then declined seasonally in the summer and fall.

Phosphate fertilizer prices increased in 1983/84 in response to increased use and a continuing recovery in the world phosphate market. Phosphate fertilizer price increases were dampened by the availability of adequate production capacity that could be used to increase production and meet expanded consumption needs. Available supplies that continued to exceed consumption caused October 1984 prices to drop back to May 1983 levels.

Potash prices moved up during 1983/84, but compared with the other nutrients, potash price increases were under the most pressure. Producer inventories were excessive going into 1983/84 and the availability of adequate North American potash production capacity maintained plentiful supplies in 1983/84 as U.S. and world demand increased.

Supplies

U.S. nitrogen production should increase in 1984/85, as domestic producers expand output. Stabilizing natural gas prices are helping to make nitrogen fertilizer production costs more certain and improve the competitive position of the domestic nitrogen fertilizer industry. Increased domestic nitrogen fertilizer production should keep imports in 1984/85 close to year-earlier levels. Also, nitrogen exports in 1984/85 are expected to remain close to 1983/84 levels.

U.S. phosphate fertilizer production is forecast to rise about 4 percent in response to greater demand here and abroad. Exports could be up nearly 5 percent in 1984/85 as the world phosphate market continues to recover from the depressed 1981/82 levels.

Larger potash supplies to meet greater demand in 1984/85 will come from increased production and imports. U.S. production could be up over 10 percent, while imports are likely to be up less than 5 percent.

Trade

Increased nitrogen and potash fertilizer imports were important in meeting farm needs during 1983/84. Increased phosphate fertilizer requirements were met from additional domestic production.

On a nutrient basis, imports of all nitrogen products in 1983/84 increased about 45 percent from 2.8 to 4 million tons, substantially surpassing the nitrogen imports for previous years (table 6). Imports rose sharply because of the deteriorating competitive position of the U.S. nitrogen industry in world markets. This was caused by high U.S. industry production costs and the high value of the dollar. Imports rose 52 percent for anhydrous ammonia and 21 percent for in urea.

U.S. nitrogen exports increased 3 percent in 1983/84, primarily because of the continuing recovery of the world phosphate market and the increase in diammonium phosphate exports in the second half of the 1983/84 fertilizer year.

Phosphate exports in 1983/84 were up for the second year in a row as the continuing recovery in the world phosphate market required more U.S. product. In 1983/84, phosphate fertilizer exports were up about 10 percent from a year earlier. Exports of phosphoric acid and ammonium phosphate were up, more than offsetting declines in normal and triple superphosphate exports.

After declining in the previous 2 years due to lower demand, potash imports in 1983/84 increased 17 percent. Potassium chloride, at 8.5 million short tons, was the largest nutrient import item.

Table 6--U.S. Fertilizer Imports and Exports

Year	Imports		Exports	
	Nitrogen	Potash	Phosphate 1/	Nitrogen
	Million short tons			
1980/81	2.45	5.49	4.41	3.09
1981/82	2.57	4.91	3.75	2.50
1982/83	2.77	4.51	3.92	2.00
1983/84	4.02	5.29	4.33	2.05
1984/85 2/	4.00	5.50	4.50	2.00

1/ Does not include phosphate rock. 2/ Forecast.

U.S. FARM MACHINERY OUTLOOK

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Domestic demand for farm machinery has been declining since 1980 and is expected to remain depressed in 1985. Financial conditions, which affect farmers' ability to assume additional long-term debt, continued to deteriorate in 1984 and are not expected to improve during the coming year. Record debt, declining cropland values, lower income, and declining export demand for U.S. commodities have reduced farm equity. Near-record high real interest rates have increased capital costs. These factors have increasingly made it more difficult for farmers to purchase new machinery in recent years.

Farm machinery inventories throughout the market system are at or near record levels in 1984. Domestic manufacturers drastically lowered production this year to bring retail supplies in line with demand. If demand does not rise during 1985, further production cutbacks could occur.

Demand

U.S. farmers are projected to purchase about $7.4 billion of farm machinery in 1984 (figure 1). Nominal expenditures for farm machinery have declined 37 percent since 1979 and have been at depressed levels during the past three years. With farm financial conditions not expected to improve next year, domestic demand for farm machinery in 1985 could drop slightly below 1984. Depending on interest rates, expenditures for farm machinery are projected to range from $7.3 to $7.8 billion in 1985.

Unit purchases in 1984 are projected to total 60,900 for over-40 horsepower (hp) two-wheel drive tractors and 3,700 for all four-wheel drive tractors (figures 2 and 3). These purchases are about 8 and 27 percent, respectively, below demand levels in 1983. Unit purchases of most grain and forage harvesting equipment also are projected to decline in 1984, totaling 10,000 for self-propelled combines, 8,200 for balers (producing under 200 pound bales), and 3,500 for forage harvesters (figure 4).

Domestic purchases in 1985 are forecast to range from 57,800 to 65,100 units for over-40 hp two-wheel drive tractors and from 3,500 to 5,000 units for all four-wheel drive tractors. Demand for combines and balers is not expected to improve appreciably in 1985, but purchases of forage harvesters should total 3,300 to 4,400 units.

For the past several years, U.S. farmers have steadily been buying fewer and smaller-powered tractors. Since 1979, when farm machinery expenditures were record-high, total power takeoff capacity for over-40 hp tractor purchases declined from 15.3 million hp to 6.6 million hp in 1984. The weighted average per-unit capacity for these purchases also has steadily declined from a high of about 111 hp in both 1980 and 1981 to 102 hp in 1984. Given current financial projections, farmers are expected to continue to purchase smaller-powered tractors in the near future.

Financial Conditions

The current situation affecting the financial well-being of the agricultural community is characterized by increased interdependency with national and international economic conditions. The effect of the U.S. monetary and fiscal environment on interest and inflation rates and their impact on the value of the dollar ultimately influence farm equity, capital costs, and export demand for U.S. commodities. These factors, in turn, determine the level of demand for farm machinery.

The 1970's were characterized by relatively favorable financial conditions on the farm and dramatic increases in export demand for U.S. commodities, as cropland values (equity) rose sharply, real interest rates fell to low or negative levels, and the value of the dollar steadily declined. Farmers responded to these conditions by increasing the size of their operations and purchasing additional, higher-powered farm machinery.

The current monetary and fiscal environment, starting in 1979, has caused real interest rates to rise sharply, leading to a record-high dollar value relative to foreign currencies in 1984. Because of these changes and depressed world economic conditions, total farm debt has increased to record levels, cropland values have steadily fallen, and export demand for U.S. commodities has declined.

Current projections call for little or no improvement during 1985 in factors that affect the ability of U.S. farmers to assume additional long-term debt. The real after-tax PCA interest rate in 1985 is projected to average between 4.5 and 6 percent, with a high probability it will tend toward the upper value (figure 5). Real commercial rates also are forecast to fall in this range. As a result, capital costs for farmers will remain high next year. Higher interest rates not only reduce demand for farm machinery but also increase operating costs. Consequently, real interest expenses as a share of real total production expenses increased from 12.6 percent in 1980 to 15.8 percent in 1984.

The debt-asset ratio for January 1, 1985, is forecast to increase slightly from the January 1, 1984 estimate of 20.8 (figure 6). The ratio is expected to rise primarily because of continued high total farm debt and further declines in the value of farm real estate, which comprises about 75 percent of total farm assets. Real total farm debt dropped to $96.1 billion in 1984 from a record $100.5 billion in 1983. The real value of farm real estate totaled $342.2 billion in 1984, declining for the third straight year. The upward trend in the debt-asset ratio reflects continued deterioration in the financial condition of the farm sector.

Although farm income estimates are not available for 1985, income levels projected for 1984 portray a mixed picture. Real net farm income is expected to increase from a drought- and PIK-depressed $7.5 billion in 1983 to between $13 and $15 billion in 1984 (figure 7). Demand for farm machinery in 1984, however, was not affected significantly by this increase. Total real net cash income, on the other hand, is forecast to fall from $18.6 billion in 1983 to $16.2 billion in 1984 as increases in production expenses exceed gains in gross cash receipts. For many farmers with increased cash flow this year and in 1985, funds likely will be used to reduce existing debt rather than to purchase new farm machinery.

The real trade-weighted dollar exchange rate for all crops is forecast to decline slightly in 1985 from the current 1984 estimate of 100 (figure 8). But, with the value of the dollar expected to remain near historically high levels, commodity costs to overseas customers will be high, which will discourage export sales. Without increases in export demand, cropland values and cash income more than likely will not rise.

Little or no improvement is projected in the financial situation of the farm sector during 1985. Therefore, demand for farm machinery is expected to remain depressed. Depending on interest rates, nominal expenditures for farm machinery are forecast to total $7.3 to $7.8 billion in 1985. It is important to remember that financial conditions for many farmers deteriorated over an extended period. Significant improvement in these conditions likewise will take several years.

Supply

Retail supplies of all farm machinery items are expected to be excessive during 1985. The current farm machinery supply situation reflects the prolonged effects of growing inventories and declining demand. Although the industry has recently responded to this condition by drastically cutting production, continued reductions in demand have caused inventory-to-purchase ratios to rise significantly. Until demand increases or manufacturers sufficiently reduce production to where it is more in line with demand, supplies of farm machinery will remain large.

Farm machinery indices for September 30 inventories to January-September purchases between 1978 and 1984 exemplify the excessive supply situation facing the farm machinery industry. The ratio for over-40 hp two-wheel drive tractors more than doubled from 65 in 1979 to 137 in 1984 (figure 9). The ratio for all four-wheel drive tractors improved from 137 in 1983 to 130 in 1984, but is still far above the 1979 ratio of 79. Inventory-to-purchase ratios for major grain and forage harvest equipment items also are trending upward. In particular, the ratio for self-propelled combines rose from 118 in 1981 to 209 in 1984 (figure 10). Ratios for balers and forage harvesters have been more stable than for combines, but still reflect large supplies.

Farm machinery dealers are offering attractive sales incentives to encourage farmers to purchase new farm machinery. These incentives include price discounts, cash rebates, fixed finance rates below current commercial rates, delayed financing, deferred payments, and variable maturity periods. Another attractive incentive currently offered by many firms is multi-year warranty coverage for new machinery purchases. Sales incentives, however, have not encouraged farmers with substantial debt or cashflow problems to purchase new machinery. Without lower interest rates, continued improvement in the world economy, and a more competitive dollar for a sustained period, it is unlikely that demand for farm machinery will increase.

Industry Profile

The U.S. farm machinery industry faces unprecedented financial problems as demand for its products has fallen for the fifth consecutive year and is expected to remain depressed in 1985. Economic conditions since 1980 have taken many farmers totally out of the market for new farm machinery. For these farmers, the holding of currently-owned machinery for a longer time, machinery leasing, and purchases of used machinery are the only affordable means of satisfying their machinery needs.

Also, unlike other inputs (e.g. fertilizer, pesticides, and seed) that are relatively price inelastic at the farm demand level and are usually purchased with short-term capital, most farm machinery purchases are financed for more than 3 years. Because of different demand criteria for inputs and existing economic conditions, which are not allowing many farmers to assume additional long-term debt, the farm machinery industry is more vulnerable to general economic conditions affecting agriculture than are other farm input industries.

In response to the current situation, domestic farm machinery manufacturers are taking short- and long-term steps to reduce operating costs and overhead. As gross receipts have declined for most machinery manufacturers, efforts to reduce costs and lower breakeven points have allowed them to remain in operation. Still, the major problem threatening the financial well-being of most full-line firms is manufacturing capacity that far exceeds any foreseeable market demand.

Recent production levels showed domestic farm machinery firms operating between 25 and 30 percent of capacity. Even at these low levels, many firms continued to reduce output during fourth-quarter 1984. Production in some plants is not expected to resume next year until demand reduces excess inventories.

Although production cuts are the primary cost-reducing strategy for most domestic firms, other steps include contractual arrangements with overseas subsidiaries and independent manufacturers to produce all or portions of some farm machinery items, scaled down product lines, and personnel reductions through early-retirement incentives.

Faced with a continued depressed market for farm machinery in 1985, some independent firms and parent companies have decided to concentrate long-term efforts in other markets. Yet, other firms have announced plans to market new tractors. Given excessive machinery inventories, lower production levels, and projected depressed demand in 1985, some firms may permanently consolidate production in a dramatic fashion or drop out of the market altogether.

FIGURE 1--FARM MACHINERY EXPENDITURES

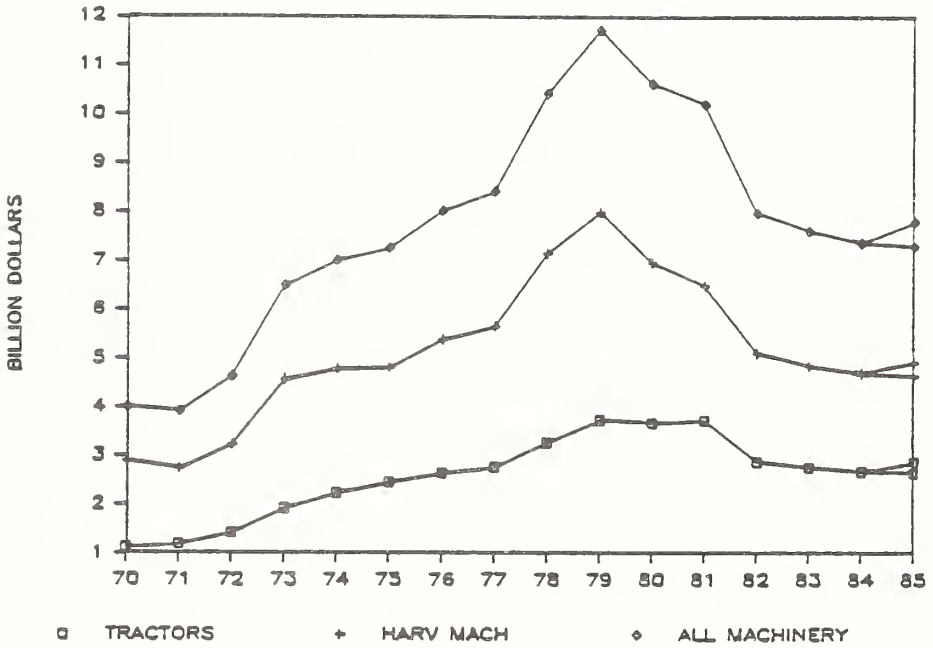


FIGURE 2--DOMESTIC PURCHASES

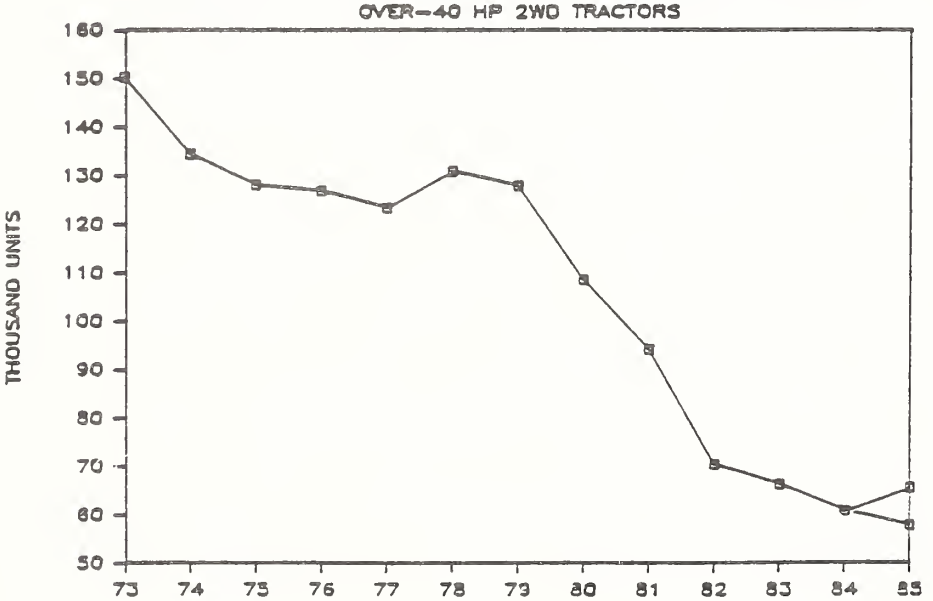


FIGURE 3--DOMESTIC PURCHASES

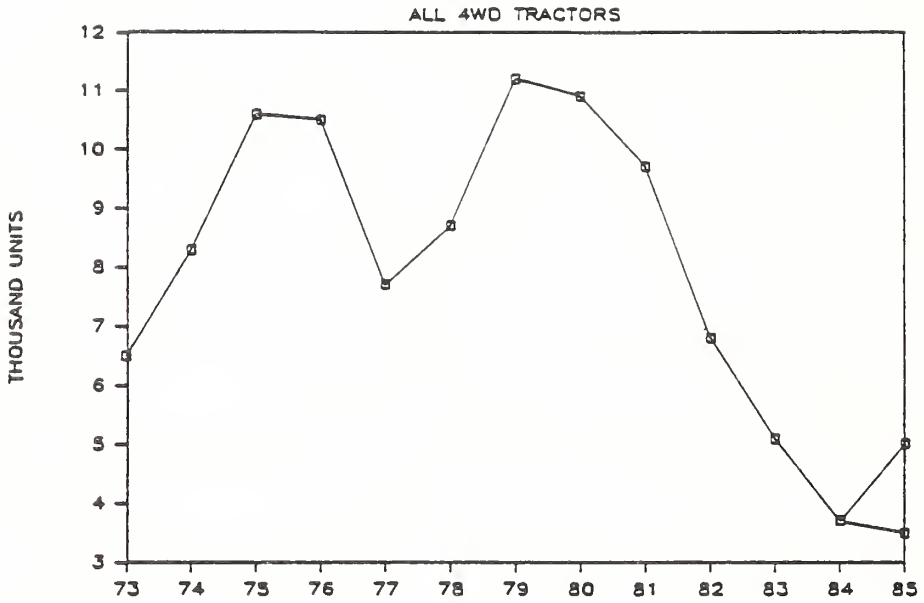


FIGURE 4--DOMESTIC PURCHASES

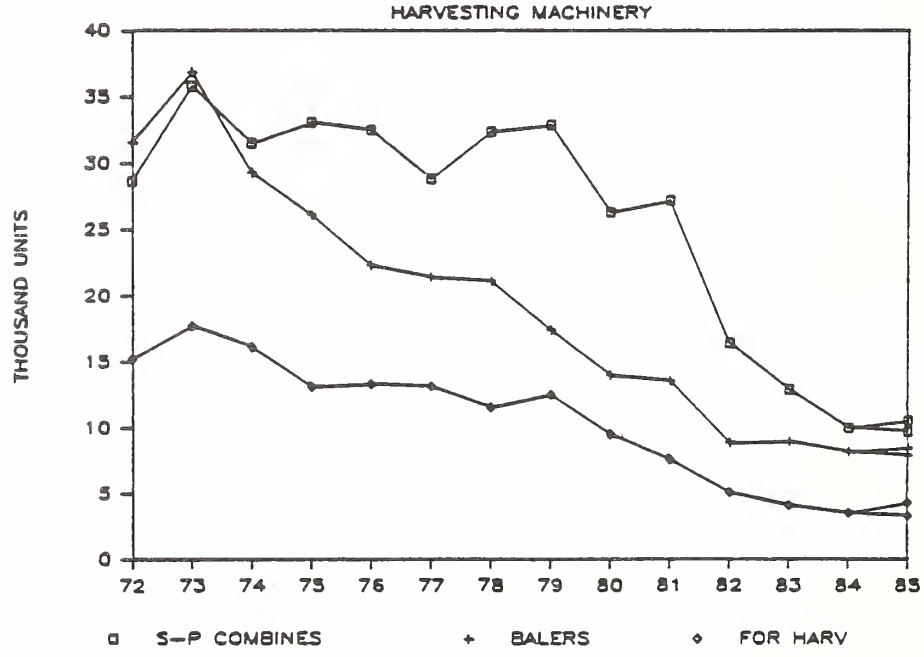


FIGURE 5--PCA INTEREST RATE

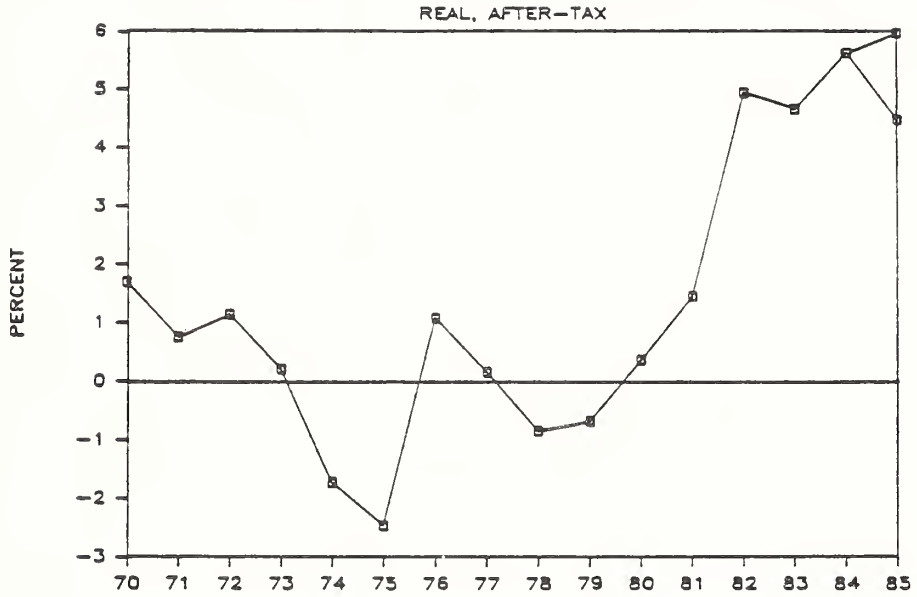


FIGURE 6--DEBT-ASSET RATIO

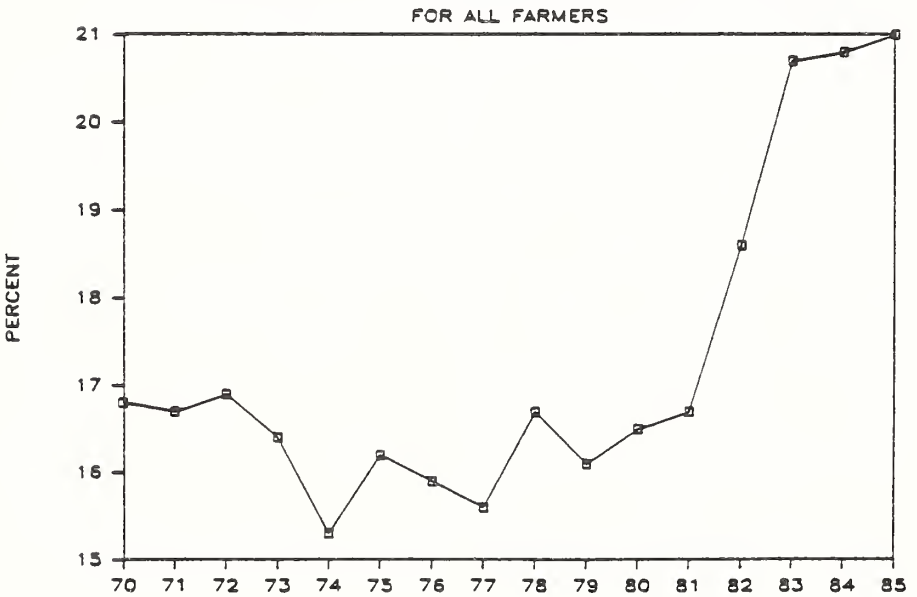


FIGURE 7--REAL FARM INCOME

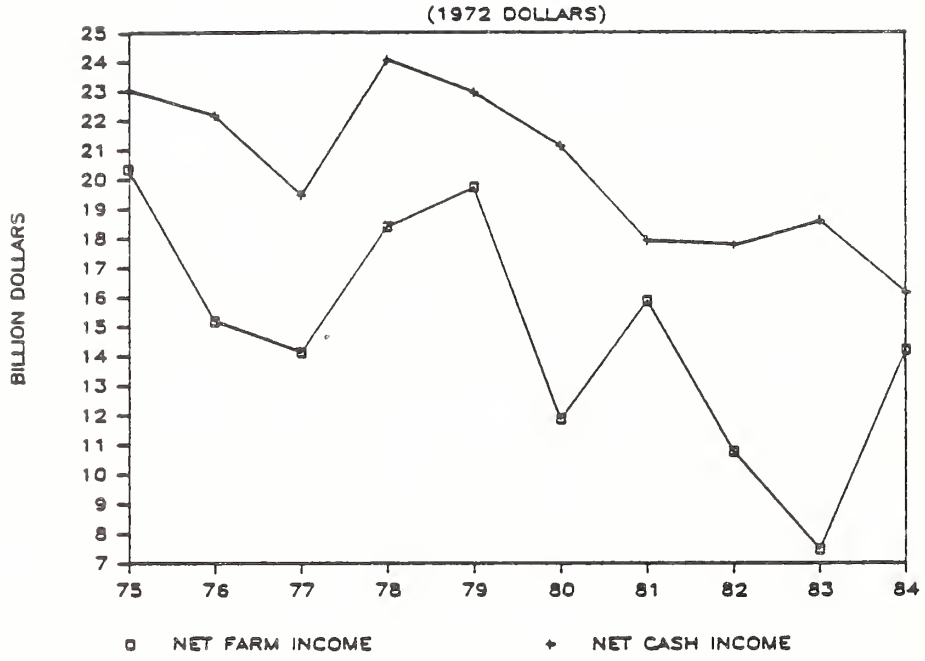


FIGURE 8--TRADE-WEIGHTED EXCHANGE RATE

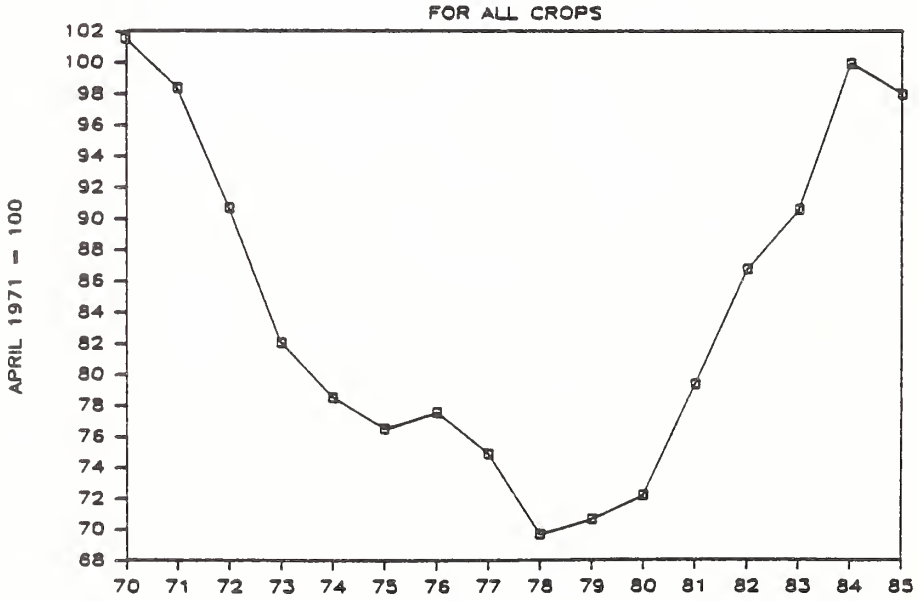


FIGURE 9--INVENTORY TO PURCHASE RATIOS

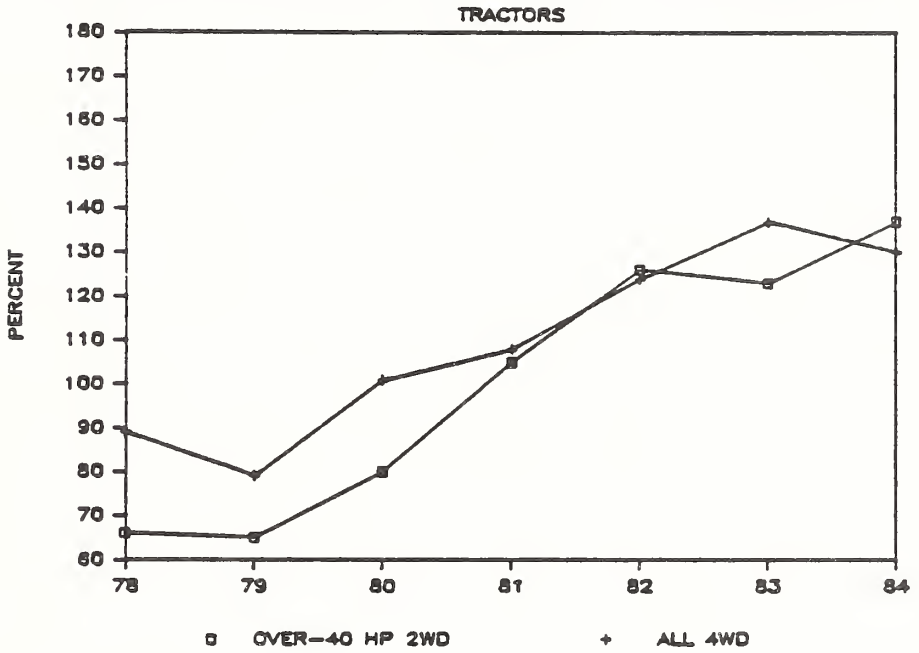
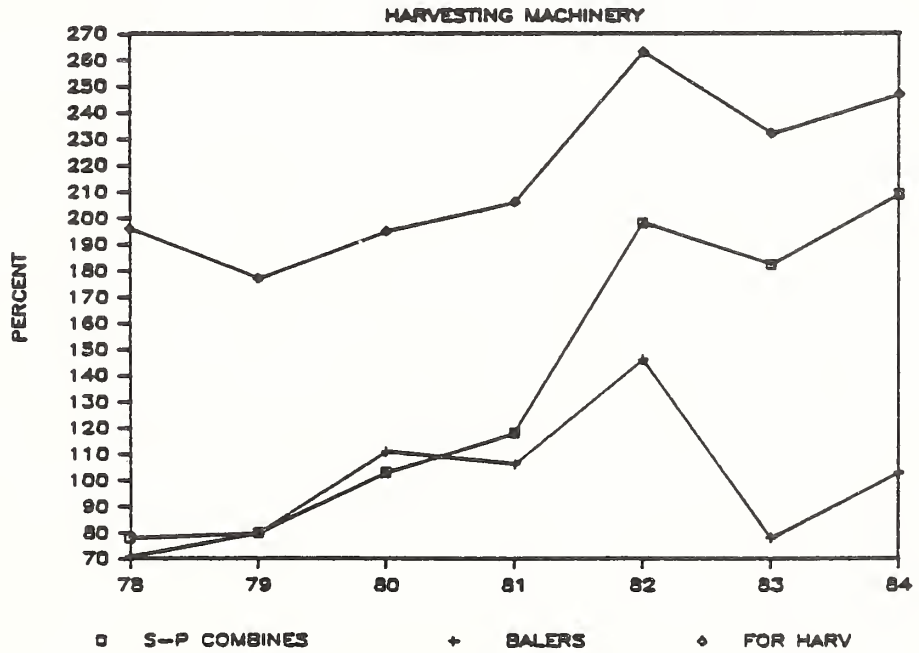


FIGURE 10--INVENTORY TO PURCHASE RATIOS



A PARTNERSHIP IN PROGRESS: RURAL COMMUNITIES AND FmHA

Charles W. Shuman, Administrator
Farmers Home Administration, USDA

1985 Agricultural Outlook Conference, Session #41
Washington, D.C.

For Release: Wednesday, December 5, 1984



"A Partnership in Progress", the subject of this panel, is highly descriptive of this Administration's policy for rural America. We learned long ago that the Federal government, by itself, can only accomplish so much. Local governments by themselves and the private sector, by itself, can only accomplish so much.

The real lesson, of course, is that together we can accomplish whatever we set out to do.

The concerns of rural America are high on our priority list. That priority can be seen even in the way the Department of Agriculture is organized. There are only two Under Secretaries of Agriculture. One oversees commodity programs and international affairs and the other is the Under Secretary for Small Community and Rural Development. That position, held by Frank Naylor, is a relatively recent (1980) addition to the organizational chart. It is the result of an upgrading of rural affairs in USDA priorities.

Three agencies and one policy office report to the Under Secretary for Small Community and Rural Development. They are the Farmers Home Administration, the Federal Crop Insurance Corporation, the Rural Electrification Administration and the Office of Rural Development Policy.

Speaking for Farmers Home, I am proud of what we have done in establishing the groundwork for future rural development.

Over the past 50 years, we and our predecessor agencies have invested over $124 billion through our farm, housing and community programs. Last year alone, we made over a quarter-of-a-million loans and grants for approximately $8 billion. Using the theoretical rule-of-thumb that every dollar turns over 6 or 7 times, the FmHA investment is enormous by any standard.

During these times of run-away federal deficits, those kinds of expenditures may not continue to be practical. We have, however, learned a great deal about rural development.

It is no secret that agriculture is at the heart of economic development in rural areas. Everything else revolves around it. Our programs for water and waste facilities, for instance, grew out of the need for irrigation in earlier days. We gained experience in providing water services.

Our housing programs grew out of the need for farm labor housing and the fact that water lines attracted new rural housing construction.

As rural living became more attractive, residents needed and deserved better community facilities such as modern hospitals, city halls, court houses, and improved fire and police protection.

The need for jobs in rural areas, beyond the farm gate, inaugurated the experiment with a business and industry program.

The lessons and experience gained over the years still apply. We learned the value of working closely with state and local agencies. We learned the value of working with local organizations and the private sector. We also gained a great deal of practical expertise which is available to others who are working to improve the quality of life in rural America.

The move toward working more closely with local governments and the private sector has been progressing for some time in our housing and community programs. More recently, greater participation with the private sector has become more apparent in our farm programs. For instance, in fiscal year 1983, we invested about $70 million in guaranteeing loans made by lenders in the private sector. In 1984, that figure was close to $400 million.

Under the Approved Lender program, lenders in the private sector are certified in advance by FmHA. If one of their customers cannot qualify for further credit, the lender can help work up an FmHA loan. In that way, those private sector lenders can help their customers and will most likely get them back as customers once they are back on their economic feet.

Included in the President's farm credit initiatives, announced in September, are a number of innovative ways of working with the private sector. FmHA will assist local lenders through guarantees for loans that are in the "problem" category if the lenders are willing to write down the loans by at least 10 percent and work out a cash-flow schedule of payments.

FmHA County Supervisors can tap the expertise of qualified private sector farm credit and farm management consultants. And, in a trial program, FmHA can contract directly with local lenders in five states to use their personnel to help the FmHA County Supervisor process and service loans.

The outlook in the country, as well as in USDA, must be toward less dependence on the Federal government. That, however, does not mean a lowering of our sights for the future. It does mean realigning our views on how best to accomplish our goals. Rural America, as well as other sectors of the economy will be better served as we move more realistically into "A Partnership for Progress."

Mohawk Valley Economic Development District, Inc.
26 West Main Street • P.O. Box 69, Mohawk, New York 13407 • Area Code (315) 866-4671 or 797-7818

Speech to be delivered by John M. Ladd at a Conference on Outlook '85 - Rural Communities and FmHA - Wednesday, December 5, 1984. Session 41

Ladies and Gentlemen:

It is a pleasure to appear before you today and give you my viewpoints on what is happening in Rural America and most particularly, in the smaller communities outside of the major Metropolitan areas that I work with in Upstate New York. The areas that I cover encompass 4400 square miles, 5 counties, 80 townships, 50 villages, 7 cities and a population of 475,000 people.

The Economic Development Administration has played a key role in the development of the Mohawk Valley area. We have found them to be very cooperative and most particularly, in most instances, able to assist us in overcoming catastrophic problems that are occurring in Rural America. Our office has always worked very closely with the Farm and Home Administration in the Syracuse and Utica offices, to develop housing, many applications for loans and grants, for water systems in most instances, and probably our major success has been with the business and industrial part of FmHA, which has played a key role in assisting major companies to expand and grow in our area. For many of the projects which we have undertaken such as water projects for industrial development, we have gone to Farmers Home and borrowed the money from them for the local share of the project. In most instances, for a project costing $1 million, EDA would make a grant of $700,000 or 70% of the total project and the Farmers Home would then loan the money at long term at fairly low interest rates so that the community could afford to do the project. However, the cost of this money has accelerated tremendously in the last year and a half and I wish now that a freeze

could be put on so that communities still could borrow the money at a rate of 5% to 6%. This appears to be a figure that is most workable in putting a project together. Rural development is a mixture of many known components and many unknowns. What today may be a very productive farm may tomorrow be sold off for a housing development. With the sudden death of a farmer running a large farm there may be no children interested in continuing farming and so the cows are sold off, the farm probably is not managed properly for at least one year and it is sold either to a major Co-op or to a larger private investor for either continued farming or housing and if not, an industrial park.

Over the years our office has attempted to work with the Farmers Home in developing a housing program and have even offered to allow an FmHA 502 housing program to work out of our office. We would give the gratuitous service from our employees to assist in their case load a so-called "Partnership in Progress".

One of the experiences I have continually run into in talking to the various offices, county and statewide, is that they are undermanned in the field and it appears ridiculous when you are told that a case worker cannot get to a project for 2 or 3 months. It is asinine to think that when you are dealing with a major problem in a small community that it takes this long to get a government agency in to assist you. My experience with the staff in our area has been excellent and I agree with them that they have a work load beyond their comprehension, however, I see large offices filled with many people here in Washington but very few people in the regional offices where they are really needed. If the Farmers Home is going to dispense billions of dollars every year then they should have the staff in the field to manage it.

At one time, the Farmers Home had a Section 111 Program which, in my belief, could have been a very successful program. However, it was limited in the amount of money that they had to make grants with and also the amounts of grants were very small. Although my District was not the recipient of one of these grants, I know of many that were of tremendous assistance to the various economic development practitioners around Rural America. It really put a special emphasis on economic development

and also allowed them in most instances to put a staff person on to work with other agencies and to assist small communities with their economic development programs. Economic development is an ongoing process that cannot be turned on and off. It must be a complete endeavor with complete support by someone in the field who has the knowledge and know-how to put a package together. As I said earlier, the cooperation between the various agencies in our office in New York State is excellent but one of the problems we run into in many instances, is that when we bring the Farmers Home people into a community to assist us in putting a project together, one of the criteria is the level of income. I think that this is a bad regulation and should be removed. For an instance, in almost any community you go into, there will be an area of the village or city or town that has a very sub-standard mode of life and sub-standard housing and they have a very serious health problem because of sewer and water conditions but because of the regulations, the community may not be eligible for Farmers Home assistance as their level of income for the total communiity is higher than the standard. I do not believe this is fair because as you know, in any community, one side of the town may be well-heeled workers or owners of the plant and the other side may be lacking many facilities and it makes it difficult to tell the poor people that we can't do anything for them becaus their level of income is too high when you know very well, that they are no doubt, below the poverty level.

Our experience with the Business Industrial Loan Division has always been excellent and we have been able to put together several joint ventures between the Farmers Home, the Economic Development Administration and the Small Business Administration. One of our most successful is a $5,95 million loan by EDA and a $5,95 million loan by the Farmers Home to a new company in Amsterdam, New York. Also because of the amount of monies that Farmers Home has available to them, we have been able to take projects which would be unable to be financed in any other way. Financing them through Farmers Home, even though this requires action above the state level and support by the Secretary of Agriculture, these projects can be done and people in Rural communities should make every effort to take advantage of this program.

I think another of the disadvantages of the staffing in the field is that money that is appropriated every year by Congress for Rural America is never really fully expended and, in many instances, millions of dollars are turned back from each state into the federal treasury. I am not a proponent that every dollar appropriated by Congress should be spent but I do believe when there is an urgent need for this type of money in Rural America that some effort should be made to get it out during the fiscal year even if it means hiring extra employees to do it.

The records show in our area that the amount of bankruptcies of smaller businesses is still growing and this again is hurting the small communities because in many instances they are losing the small supplier who is handy to them to purchase and are forcing people to travel further to get the necessary items that they need. I believe that the Farmers Home program is an excellent program but it does need, just like a person, a physical check-up once in a while and I believe that time is here.

Thank you.

Joan Ross - Session 41

OUTLOOK '85 - AGRICULTURE OUTLOOK CONFERENCE

United States Department of Agriculture

December 3-5, 1984 --- --- Washington, D. C.

Rural Communities and FmHA

Small Community Viewpoint

Southwestern Community Action Council, Inc. is a private non-profit corporation that resulted from the Economic Opportunity Act of 1964, serving four counties in West Virginia--Cabell, Lincoln, Mason, and Wayne, one of which was among the 6% poorest counties in the United States at the time the Economic Opportunity Act was passed. Southwestern is also the designated Area Agency on Aging and, as such, subcontracts programs for senior citizens to six counties, including the four it serves as the Community Action Agency and adding Mingo and Logan Counties. Located in the largest city in the State of West Virginia, Huntington, Southwestern's role basically is to help poor people stop being poor.

Our mission--to help poor people to stop being poor--is done several ways:

1. Through the provision and direct operation of social service programs, such as:

   A. Child and Family Development Program, which includes the Head Start component providing pre-school opportunities for children three and four while involving their parents in the decision and policy making which affects their children; and the Parent Child Center component, which focuses on the parent as the primary educator of the child. Parent Child Center works with the total family because all family members interact with the child who is a part of the program.

   B. The Senior Community Service Program, which provides employment opportunities for senior citizens demonstrating their employability while providing much needed services to other senior citizens. For example, senior citizens are assigned to and supervised by the Huntington Fire Department as fire prevention educators. In this capacity they are trained to visit the homes of other senior citizens helping to educate them on fire safety and prevention while assessing potential fire hazards in the home. Many of the Senior Community Services participants are also working in senior centers, nutrition programs for the elderly, and at social service agencies providing services to other older people.

   C. Time Out--a regional facility for runaway youth, which is a part of the National Runaway Youth Network. This program gives the young person just what it says--time out to assess the precipitating factors that caused the young person to leave home in a safe and secure environment. Young people arriving at Time Out must notify their parents or guardians of their whereabouts in the first 24 hours.

2. Through the stimulation and focusing of resources of other agencies on problems and/or to meet the needs that are identified through the programs we operate, such as:

   A. The development of modular health clinics in two rural Appalachian communities, Crum and Harts Creek -- as a result of needs identified in the operation of the Parent Child Center programs in these two communities. Southwestern does not actually operate these health clinics, but we serve in the role of the catalyst and:

      1) developed grants for a National Health Service Corps to provide professional staffing of doctors, dentists, hygienists, and pharmacists,

      2) developed and submitted grants to the Appalachian Regional Commission for facilities and equipment,

      3) contacted and became the liaison with two private foundations, HYGEIA, Inc. in Whitesville, W.V. and Ephraim McDowell Foundation in Turkey Creek, Ky., who actually built and operated the clinics.

      Development of the clinics was done with the technical assistance of the Regional Medical Program in West Virginia. Both clinics are now independently operated by local boards of directors. Southwestern still provides assistance and staffing if needed.

   B. Working with the Region II Planning and Development Council as they worked to get a water system in the Crum-Kermit area funded by Farmers Home, in which Southwestern:

      1) did the initial needs assessment in the Crum-Kermit Area and

      2) secured funds for the payment of tap on fees for the low income users.

3. In coordination with other agencies, secured funding for new programs or projects which Southwestern may or may not operate, such as:

   A. Appalachian Craftsman. This project was originally funded by Southwestern and directly operated to augment the limited income of older rural Appalachian women. The fundamental part of this project was to enhance the self image of rural Appalachians through recognition of their innate skills and abilities. A cooperative project with the Junior League of Huntington, W.V. and local business people, this non-profit corporation is now totally self supporting with sales throughout the United States. Several hundred thousand dollars are returned annually to the sewers for their handicraft. Appalachian Craftsman was an outgrowth of West Virginia University Extension, which had a tremendous impact on the people of West Virginia.

   B. Southwestern Housing. Southwestern Housing was initially funded by the Office of Economic Opportunity and then the Community Services Administration to produce panelized homes meeting the requirements

and criteria or standards of the Farmers Home Administration while providing lower income rural people quality housing. The factory was a multiple agency effort and, in addition to the Community Services Administration and the State Economic Opportunity office, involved:

1) CETA - the Comprehensive Employment Training program,

2) The local County Commission of the County of Wayne in West Virginia, who provided the building,

3) the local Builders' Association, which provided technical assistance through Board participation,

4) a local bank, which gave a line of credit for up to $50,000 for supplies, materials, etc. (front-end monies).

A local Board of Directors was established and operated the corporation independently. During slack periods and when the interest rates escalated, Southwestern housing manufactured trusses.

C. Colonel McGhee's Housing for the Elderly, which provides 16 units of low cost housing for elderly low income people in Lincoln County. Working with the West Virginia Housing Development Fund, which provided the technical assistance on the project and interim financing when necessary, Col. McGhee's Housing for the Elderly demonstrates what can happen when the need is recognized by all participating agencies and all of them agree to work together to help alleviate the need. Involved in the Housing Project are:

1) Farmers Home Administration, which provided the construction loan through the 515 program ($407,800),

2) The Appalachian Regional Commission, which provided land acquisition money ($60,000),

3) Department of Housing and Urban Development Section 8 Program providing rent subsidies up to $352 per unit for the 16 units over a 20-year period,

4) The Governor's Office of Economic and Community Development, which provided technical assistance and acted in a catalytic role.

To developers of large scale housing projects, 16 units in rural Appalachia may not seem significant, but to the elderly people who live in these 16 units, the change and the impact is almost overwhelming. In working with programs, particularly at an administrative level, we tend to forget how basic the needs of many of the people of our country are. Most of the people in the project have not had indoor plumbing and are not familiar with such amenities as electric or gas stoves (they previously had cooked on woodburning stoves). The Community Action staff in Lincoln County provided training in how to operate the stoves and the toilets when people were initially moved in. Follow-up sessions were held on an individual basis as needed. It is hard to put into words how primitive living conditions had been for some of the residents, and the fact that they endured the hardships of these living

conditions is a testament to their strength. The residents of the housing project are participants in the ongoing nutrition program which is funded through the West Virginia Commission on Aging with funds under Title IIIC of the Older Americans Act. This program is operated by the Community Action Program which also provides transportation. The units are located in the county seat in a residential area.

D. Southwestern, as a member of the West Virginia Community Action Association, also participates in the Rural Community Assistance Program (RCAP). The West Virginia Community Action Association is funded by the Great Lakes Rural Network and the Appalachian Regional Commission for this program, which:

1) conducts income surveys for eligibility for potential Farmers Home Administration financed water systems,

2) provides on site fiscal management training for the operators of systems identified by the West Virginia Department of Health as needing such assistance. This can be as basic as helping to set up a bookkeeping system or training the operator in double entry bookkeeping,

3) works with the planning and development councils in the Farmers Home Administration to develop proposals to secure needed systems.

The key to developing any project in a rural area, and in an urban area, also, for that matter, is coordination and cooperation among all of the various agencies involved. Unfortunately, it frequently appears to us that when legislation is developed to meet needs, guidelines and regulations are developed to prevent the very necessary coordination to implement the legislation in accordance with the Congressional intent. Each federal and state agency frequently seems to be more concerned with protecting the clear identification with a specific project through the use of their monies than providing access to those monies to impact the needs they were intended to meet. We experienced problems in coordination at every level, beginning with the corporate status of Southwestern. Several of the funding sources had specific requirements for Board composition and their by-laws. Unfortunately, these appeared to be conflicting. Yet all of the funding sources had the same goals and objectives in terms of meeting peoples' needs. In the housing project, the land was originally donated by the Board of Education. The legal problems in accepting that donation and acquiring clear title to the land were overshadowed only by the problems of getting water to the site and having an historical impact study done with the possibility of moving an early cemetery. The decision was made not to use the initial site, so it was appreciatively returned and another site was acquired. It was only through the sincere desire on the part of all of the participants in the effort to provide quality housing in this area where it was so badly needed that the housing was built. At every point it was the individuals involved who "bent over backward" to find a way to do what had to be done so that the project continued. In our rural areas, Farmers Home is the most important agency in a consortium of agencies who worked together to not only improve the quality of life but to correct life threatening problems.

I am very concerned that those who determine the availability of this important resource, or lack of it because of budget cuts, have never:

1) DRUNK WATER THAT IS DUG ON A SLOPE BELOW AN OUTHOUSE!

2) TURNED ON A FAUCET--ONLY TO HAVE LIVE LARVAE COME OUT WITH THE RUSTY WATER!

3) GONE TO SLEEP IN A SHACK WITH ONE-HALF TO ONE INCH SEPARATIONS BETWEEN THE FLOOR BOARDS WHILE THEY LISTENED TO THE WIND WHISTLING UNDERNEATH THE HOUSE THAT IS BUILT UP ON STILTS OR CONCRETE BLOCKS SO THAT IT IS NOT FLOODED WHEN THE CREEKS RISE!

While great strides have been made in eradicating these conditions, they still exist for far too many Americans. The reasons why people live in such conditions are many and complex, but our experience has shown us that no one chooses to live this way if there is an alternative.

As new methods of financing are developed, we must make sure that it is available and is flexible enough to meet these basic needs.

WORLD TOBACCO OUTLOOK

OUTLOOK '85

Kenneth E. Howland, Foreign Agricultural Service

1985 Annual Agricultural Outlook Conference Session # 42,
Washington, D. C.

For Release:

Summary

The world tobacco economy may show little if any growth in 1985. Cigarette output is expected to remain flat. Leaf trade could decline slightly. Leaf supplies will remain ample in relation to demand, maintaining downward pressure on growers' prices and export values. Without production adjustments, supply imbalances could remain troublesome in main exporting countries.

World Cigarette Output - the key determinant of leaf demand - has shown no significant growth since 1981 as stable or declining consumption in many countries in Europe and North and South America has offset slow but continuing expansion in Asian and African countries. Lingering economic recession is contributing to depressed cigarette sales in many countries, while declining smoking populations, health concerns and rising tobacco taxation are reducing per capita consumption in the industrialized countries that represent major markets for U.S. leaf.

Output in 1985 is expected to total around 4.6 trillion pieces, near this year's estimated level.

Among major consuming countries, cigarette output in the Peoples Republic of China and the Soviet Union will likely continue to expand while consumption in the United States, Japan, West Germany, the United Kingdom and most other European countries could remain flat in 1985, with any increase in cigarette production being for export. Other countries expected to show continued growth in cigarette production include Spain, Italy, Bulgaria and Egypt.

Although cigarette output remains stable, manufacturing efficiencies are improving world-wide, requiring less tobacco per cigarette. An absence of growth in cigarette output thus means negative growth in leaf requirements.

World leaf trade - reflecting weak demand - has fallen steadily since 1981. Exports next year are expected to remain near this year's level of about 1.4 million tons. The shift in the pattern of exports in favor of developing country suppliers is likely to continue.

ANNUAL AGRICULTURAL OUTLOOK CONFERENCE
USDA • DECEMBER 3-5, 1984 • WASHINGTON, D.C.

During the past decade, Brazil, Argentina, Malawi and Zimbabwe have become substantially larger exporters of raw tobacco. North American countries have experienced declining exports and rising imports, principally due to the shift in U.S. trade.

Europe has remained a tobacco trade defecit region, accounting for nearly two-thirds of world imports and only one-fifth of exports. Many Western European countries are totally dependent on imports for their tobacco needs.

Leading European exporters include Greece, Italy, Bulgaria and Yugoslavia. A large portion of exports from these countries is oriental and semi-oriental tobacco.

In Africa, the growth in imports by Egypt, Algeria and Tunisia has outpaced Malawi's and Zimbabwe's larger exports. North African countries will likely expand their imports in the period ahead.

Asian countries, whose surplus of tobacco exports over imports has remained practically unchanged during the past decade, supply about one-fourth of world exports while taking about one-sixth of imports.

World tobacco production in 1984 was only marginally smaller than in 1983. Among main cigarette types, flue-cured production was virtually unchanged as larger crops in the Peoples Republic of China, the United States, Brazil, Zimbabwe and Malawi offset sharp reductions in Canada and India and somewhat smaller crops in Argentina, Italy and Thailand. The world crop was just over 2.9 million tons in 1984.

The 1984 world burley crop is up substantially, due almost entirely to the recovery in production in the United States, the dominant producer. Production of this kind will exceed 740,000 tons (an increase of nearly one-fifth) but still will be short of 1982's record large crop.

World production of oriental tobacco is down from last year as a sharp reduction in Turkey and a smaller Russian crop offset a one-fourth boost in Greece's production. Production of oriental tobacco is about 940,000 tons. Flue-cured, burley, and oriental tobacco together make up nearly eight-tenths of the world production of all kinds of tobacco.

Production of other kinds, principally dark air-cured, continues to decline in line with decreasing world consumption of cigars and dark cigarettes.

Current weak demand coupled with only marginally smaller production has contributed to supply imbalances in a number of exporting countries. Loan stocks of price-supported kinds are at very high levels in the United States. Turkey and Greece are holding large surpluses of oriental tobacco. Uncommitted supplies of flue-cured tobacco in India reached a record level this year. In many monopoly countries, e.g. Japan, South Korea and Thailand, leaf stocks are in excess of anticipated requirements.

Leaf prices remain depressed; growers' returns have lagged behind inflation rates in most exporting countries for the past several seasons. Preliminary reports of 1984 crop sales indicate slightly stronger prices (in national currencies) in Canada, Malawi, Zimbabwe and the United States.

The present supply/demand situation suggests reduced world production is in order for next year. It is not certain, however, if developing country suppliers, striving to increase export earnings, will significantly reduce their leaf output in 1985.

The United States continues to play a key role in the world tobacco economy. We are the second leading producer and consumer (after the Peoples Republic of China), the leading exporter and the leading importer of raw tobacco.

During the past decade, however, the United States has shifted toward becoming a net importer of raw tobacco. In fact, the quantity of imports for consumption in 1983 exceeded exports for the first time in our country's history.

The main contributing factor to this shift has been and continues to be the disparity in price between U.S. tobacco and that supplied by developing countries.

A freeze in loan rates since 1982 has dampened the rise in U.S. leaf prices but has done little to reverse the trend in U.S. leaf trade, as the continuing strength of the dollar and devaluations of competitors' currencies have kept off-shore tobaccos very price competitive in world markets.

United States leaf tobacco trade will likely remain in surplus next year. Export volume, because of the larger 1984 crop and price discounts, could improve over this year's 220,000 tons, perhaps reaching 230,000 tons in the calendar year. The value of exports could remain about $1.4 billion.

Imports next year, reflecting stable U.S. consumption, may show little change from 1984's forecast of just under 200,000 tons.

Cigarettes: Estimated Output
(Billion of Pieces)

Country/Region	Average 1974/78	1979	1980	1981	1982	1983 1/
North America						
Canada	61.4	65.4	67.2	68.6	68.1	63.9
Mexico	45.9	51.2	53.5	52.5	52.4	49.1
United States	668.3	704.4	714.2	736.5	694.2	667.0
Others	43.6	49.1	48.3	49.1	49.5	50.7
Regional Total	819.2	870.1	883.2	906.7	864.2	830.7
South America						
Argentina	37.4	38.2	38.0	35.2	32.5	34.6
Brazil	119.8	137.0	142.7	135.0	132.3	129.2
Colombia	18.5	20.6	21.2	19.8	20.1	21.7
Venezuela	18.5	22.0	21.3	19.8	19.5	20.2
Others	22.5	24.3	24.9	25.5	24.1	23.8
Regional Total	216.7	242.1	248.1	235.3	228.5	229.5
Western Europe						
European Community						
Belgium/Luxembourg	25.3	26.4	26.5	26.9	28.7	28.0
Denmark	9.1	9.6	9.2	9.8	9.9	9.8
France	83.3	77.5	72.5	62.5	62.5	62.1
Germany	142.7	157.5	157.9	167.8	148.2	155.9
Greece	22.7	24.9	24.9	25.4	25.9	24.9
Ireland	8.5	7.4	7.9	7.5	8.1	7.3
Italy	70.8	68.8	73.1	72.2	80.6	83.7
Netherlands	33.7	41.9	40.7	38.7	43.0	44.0
United Kingdom	157.1	153.1	155.6	149.6	144.6	141.9
Regional Total	553.0	567.2	568.3	560.5	550.1	558.7
Other W. Europe						
Austria	14.2	15.4	15.2	14.7	15.6	15.5
Finland	7.3	9.5	9.7	13.0	8.3	8.0
Norway	.7	.8	.8	.7	.7	.7
Portugal	12.7	13.3	13.1	13.4	13.6	14.4
Sweden	10.3	10.8	10.9	10.3	11.1	10.4
Switzerland	28.6	29.3	31.3	27.6	26.5	25.7
Spain	57.9	64.8	67.5	68.0	68.2	64.0
Regional Total	132.1	143.9	148.5	147.7	144.5	138.7

Continued

Cigarettes: Estimated Output
(Billion of Pieces)

Country/Region	Average 1974/78	1979	1980	1981	1982	1983 1/
Eastern Europe						
Bulgaria	75.3	82.0	86.2	93.4	95.3	97.0
Czechoslovakia	23.1	24.0	24.0	22.3	22.1	22.6
Germany, East	20.7	24.8	26.0	26.0	25.6	26.0
Hungary	24.4	25.0	27.2	27.1	26.1	25.3
Poland	86.8	91.4	93.4	83.0	87.5	82.8
Yugoslavia	45.4	60.2	59.1	64.2	58.9	58.5
USSR	374.5	360.3	364.0	364.0	359.3	369.0
Other	36.8	39.6	40.1	37.3	42.2	42.1
Regional Total	687.0	707.3	720.0	717.3	717.0	723.3
Africa						
Algeria	10.2	14.0	15.2	16.0	17.0	17.5
Egypt	23.0	29.9	32.5	35.0	37.0	44.0
South Africa	22.2	25.0	28.8	26.7	28.6	27.1
Tunisia	5.0	5.6	5.6	4.6	6.0	6.2
Others	63.6	67.6	67.5	69.2	65.2	69.6
Regional Total	124.0	142.1	149.6	151.5	153.8	164.4
Asia						
China (PRC)	578.4	651.0	760.0	866.0	942.5	926.6
Hong Kong	4.1	4.1	5.0	6.4	5.8	7.7
India	65.6	78.8	79.5	86.8	94.0	85.0
Indonesia	58.7	69.8	83.9	90.1	86.2	92.1
Japan	295.1	308.3	303.2	306.6	309.1	305.5
Korea, Rep. of	55.9	64.4	70.4	72.2	71.8	74.7
Malaysia	11.6	13.7	13.7	14.0	14.3	13.4
Philippines	48.8	55.3	58.8	61.8	70.0	57.8
Thailand	23.8	28.0	30.5	33.0	30.0	29.0
Taiwan	21.8	24.5	25.4	27.4	28.1	29.9
Turkey	54.1	54.5	48.4	56.5	63.9	62.8
Others	121.5	137.5	141.6	149.2	154.8	157.6
Regional Total	1,339.4	1,489.9	1,620.4	1,770.0	1,870.5	1,878.1
Oceania						
Australia	31.8	33.0	35.2	35.2	34.6	33.2
New Zealand	6.4	6.4	6.3	6.2	6.3	6.4
Regional Total	38.2	39.4	41.5	41.4	40.9	39.6
World Total	3,909.6	4,201.5	4,379.6	4,530.6	4,569.6	4,563.0

1/ Preliminary.

COMMODITY PROGRAMS, FAS, USDA

Exports* of Unmanufactured Tobacco
Selected Countries
(Thousand Metric Tons)

Country/Region	Average 1976/80	1981	1982	1983 1/	1984 2/
North America					
Canada	28.0	33.0	28.4	24.0	21.3
Mexico	23.6	18.0	18.0	16.0	16.0
United States	282.0	266.1	260.7	239.4	220.0
Others	55.9	55.0	40.1	30.9	39.2
Regional Total	389.5	372.1	347.2	310.3	296.5
South America					
Argentina	22.2	16.9	26.3	29.2	27.5
Brazil	121.5	148.4	166.0	155.3	163.0
Others	35.8	23.1	21.2	25.8	29.3
Regional Total	179.5	188.4	213.5	210.3	219.8
Europe					
Bulgaria	68.7	64.7	60.0	50.0	50.0
Greece	61.0	87.0	73.0	81.9	86.0
Italy	48.4	75.8	96.9	80.1	75.0
Yugoslavia	24.4	22.2	25.0	28.0	28.5
Others	104.8	75.0	95.8	96.6	92.8
Regional Total	307.3	324.7	350.7	336.6	332.3
Africa					
Malawi	45.5	40.9	45.5	60.0	55.0
Zimbabwe	75.5	116.6	80.8	92.9	94.5
Others	29.3	24.2	17.5	16.4	15.8
Regional Total	150.3	181.7	143.8	169.3	165.3
Asia					
India	72.6	104.9	97.9	83.5	80.0
Indonesia	24.7	25.1	20.6	24.2	24.0
S. Korea	41.5	37.9	31.5	32.6	32.1
Philippines	24.9	28.0	26.7	20.6	22.8
Thailand	31.5	36.6	37.9	35.2	38.5
Turkey	73.5	131.0	104.9	69.3	85.0
Others	83.2	53.5	87.0	74.9	76.4
Regional Total	352.4	416.9	406.5	340.3	358.8
World Total	1,379.0	1,483.9	1,461.7	1,366.7	1,372.8

*Includes Re-exports. 1/ Preliminary. 2/ Forecast.

COMMODITY PROGRAMS, FAS, USDA

Imports* of Unmanufactured Tobacco
Selected Countries
(Thousand Metric Tons)

Country/Region	Average 1976/80	1981	1982	1983 1/	1984 2/
North America					
United States	169.2	234.9	242.6	208.6	200.0
Others	10.7	10.3	8.2	8.9	7.1
Regional Total	179.9	245.2	250.8	217.5	207.1
South America					
Regional Total	11.3	10.6	12.1	13.8	12.1
European Community					
Belgium/Luxemburg	38.6	34.4	37.7	38.0	40.0
Denmark	15.9	15.4	14.1	14.1	14.0
France	50.8	37.8	36.9	45.5	42.1
Germany, West	181.0	170.9	165.5	166.6	160.0
Greece	1.5	3.7	4.3	5.1	5.0
Ireland	7.7	7.4	8.6	5.4	6.6
Italy	29.7	23.2	30.7	34.5	28.0
Netherlands	66.6	65.1	82.2	84.9	80.0
United Kingdom	164.4	139.9	127.4	130.2	128.0
Regional Total	556.2	497.7	507.4	524.4	503.7
Other West Europe					
EFTA 3/	75.3	78.0	71.4	70.4	70.7
Spain	68.5	71.1	66.0	70.8	66.0
Regional Total	143.8	149.1	137.4	141.2	136.7
East Europe					
USSR	73.4	104.7	124.1	135.0	140.0
Others	80.4	111.8	90.5	103.2	95.9
Regional Total	153.8	216.5	214.6	238.2	235.9
Africa					
Algeria	8.6	6.5	8.0	10.0	10.0
Egypt	29.3	42.5	42.6	49.0	52.0
Morocco	9.9	8.2	4.1	6.6	8.0
South Africa	7.0	10.2	10.1	14.3	7.0
Tunisia	3.9	4.6	7.0	7.0	7.0
Others	19.3	14.8	16.1	15.0	15.7
Region Total	78.0	86.8	87.9	101.9	99.7
Asia					
Taiwan	14.6	11.3	16.1	10.1	16.5
PRC	10.0	80.0	30.0	20.0	20.0
Hong Kong	8.4	20.3	13.6	13.0	14.5
Indonesia	12.6	21.6	16.6	13.5	12.0
Japan	80.2	84.3	78.3	75.5	74.1
Korea, Rep. of	10.1	12.6	4.4	2.1	0
Philippines	10.9	15.8	9.2	10.9	8.1
Singapore	7.7	6.8	8.2	8.5	9.0
Thailand	9.4	7.9	12.8	4.6	9.2
Others	34.1	35.5	33.9	33.0	38.1
Regional Total	198.0	296.1	223.1	191.2	201.5
Oceania					
Australia	10.4	11.1	11.8	9.9	9.9
New Zealand	3.6	3.4	3.5	3.6	4.0
Regional Total	14.0	14.5	15.3	13.5	13.9
World Total	1,334.9	1,516.4	1,448.6	1,441.8	1,410.6

* Reports arrivals, customs withdrawals or manufacturers usings, depending on country.
1/ Preliminary. 2/ Forecast. 3/ Austria, Finland, Iceland, Norway, Portugal, Sweden, Switzerland.

Estimated Flue-cured Production
(Thousand metric tons f.s.w.)

Region/Country	1982	1983	1984 1/
North America			
Canada	67	110	89
United States	457	372	389
Others	13	10	10
Regional Total	537	492	488
Central America/Caribbean	28	28	27
South America			
Argentina	41	45	40
Brazil 2/	248	234	242
Others	20	17	19
Regional Total	309	296	301
Europe			
Bulgaria	26	30	21
Italy	28	30	26
Poland	19	17	22
Yugoslavia	21	17	21
Others	19	18	21
Regional Total	113	112	111
Africa			
Malawi	22	22	23
South Africa	23	25	26
Zimbabwe	89	94	109
Others	27	26	28
Regional Total	161	167	186
Asia			
China (PRC)	1,848	1,200	1,275
India	135	184	116
Indonesia	30	29	28
Japan	84	82	83
Korea, Rep. of	80	65	65
Pakistan	29	25	34
Philippines	47	49	54
Taiwan	26	23	26
Thailand	50	51	50
Others	81	80	76
Regional Total	2,411	1,791	1,807
World Total	3,559	2,886	2,920

1/ Preliminary. 2/ Includes Amarelinho which totaled 32,000 tons in 1984.

Estimated Burley Production
(Thousand Metric Tons f.s.w.)

Region/Country	1982	1983	1984 1/
North America			
Mexico	18	18	17
United States	373	218	331
Others	2	2	
Regional Total	393	238	349
Central America/Caribbean	15	16	17
South America			
Argentina	13	15	17
Brazil	33	38	40
Others	14	13	17
Regional Total	60	66	74
Europe			
Italy	52	60	60
Greece	23	27	35
Spain	37	37	38
Others	26	30	29
Regional Total	138	154	162
Africa			
Malawi	27	41	27
Others	22	21	20
Regional Total	49	62	47
Asia			
Korea, Rep. of	35	36	33
Philippines	13	13	21
Thailand	21	19	18
Others	27	28	23
Regional Total	96	96	95
World Total	751	632	744

1/ Preliminary.

COMMODITY PROGRAMS, FAS, USDA

Estimated Oriental Production
(Thousand Metric Tons f.s.w.)

Region/Country	1982	1983	1984
Europe			
Bulgaria	120	107	121
Greece	108	85	105
Italy	24	27	24
Yugoslavia	50	48	48
Others	29	26	26
Regional Total	331	293	324
Asia			
Turkey	206	227	209
Others	54	61	62
Regional Total	260	288	271
USSR	302	377	340
Others	4	3	3
World Total	897	961	938

1/ Preliminary.

COMMODITY PROGRAMS, FAS, USDA

FLUE-CURED TOBACCO: ESTIMATED AVERAGE GROWER PRICES, 1979-1983 (IN U.S. DOLLARS PER KILOGRAM 1/)

COUNTRY	1979	1980	1981	1982	1983
Canada	2.48	2.56	2.78	2.91	2.93
United States	3.09	3.20	3.66	3.94	3.92
Argentina 2/	2.49	3.56	4.25	3.07	1.98
Brazil	.88	.73	.91	1.07	.66
Italy 3/	3.00	3.27	2.90	2.92	2.63
Malawi	1.93	1.24	2.00	2.38	2.13
Zimbabwe	1.11	1.27	2.58	2.17	1.91
India	1.17	1.27	1.24	1.39	.89
Korea, Republic of	3.62	3.66	3.75	3.67	3.46
Philippines	.90	1.04	1.11	1.32	1.08
Thailand	1.47	1.56	1.61	1.74	--

BURLEY TOBACCO: ESTIMATED AVERAGE GROWER PRICES, 1979-1983 (IN U.S. DOLLARS PER KILOGRAM 1/)

COUNTRY	1979	1980	1981	1982	1983
Mexico	.99	1.22	1.57	1.35	1.06
United States	3.20	3.66	3.99	3.99	3.90
Brazil	.79	.66	.76	.98	.60
Italy 3/	2.34	2.45	2.14	2.18	1.97
Greece 2/	1.96	2.89	3.23	3.29	2.05
Malawi	1.32	1.45	2.59	2.41	1.44
Korea, Republic of	2.38	2.41	2.50	2.56	2.41
Thailand	1.08	1.17	1.35	1.39	--

1/ CONVERTED TO U.S. DOLLARS AT THE AVERAGE ANNUAL CONVERSION RATES PUBLISHED BY THE INTERNATIONAL MONETARY FUND IN THE MONTHLY INTERNATIONAL FINANCIAL STATISTICS. 2/ PRICE INCLUDES SUBSIDY WHERE APPLICABLE. 3/ EXCLUDES GROWER SUBSIDY.

SOURCE: PREPARED OR ESTIMATED ON THE BASIS OF OFFICIAL STATISTICS OF FOREIGN GOVERNMENTS, OTHER FOREIGN SOURCE MATERIALS, REPORTS OF U.S. AGRICULTURAL ATTACHES AND FOREIGN SERVICE OFFICERS, RESULTS OF OFFICE RESEARCH, AND RELATED INFORMATION.

COMMODITY PROGRAMS, FAS, USDA

TOBACCO, UNMANUFACTURED: AVERAGE EXPORT AND RE-EXPORT VALUES OF SELECTED COUNTRIES, BY TYPE, 1979-1983
(U.S. DOLLARS PER KILOGRAM 1/)

COUNTRY	1979	1980	1981	1982	1983
Flue-Cured Tobacco					
United States	5.18	5.47	6.19	6.67	6.91
India	2.13	2.30	2.35	2.41	2.24
Brazil	2.40	2.55	2.70	3.50	2.31
Zimbabwe	1.84	1.93	2.42	3.33	3.06
Korea, Republic of	3.17	2.97	2.88	4.32	4.47
Canada	2.77	3.56	3.85	4.06	5.38
Thailand	1.96	2.10	2.17	2.35	--
Malawi	2.75	2.34	3.47	3.75	--
South Africa	2.06	2.18	2.55	1.93	2.01
Philippines	1.90	2.30	1.93	2.04	1.47
Italy	2.40	2.21	1.72	1.75	1.72
Burley Tobacco					
United States	5.16	5.67	6.40	6.92	7.28
Italy	1.73	1.88	1.54	1.56	1.60
Mexico	1.50	1.85	2.38	2.50	2.11
Greece	2.68	2.22	2.72	2.85	2.80
Oriental Tobacco					
Turkey	2.54	3.32	3.02	3.32	3.42
Greece	3.61	3.33	3.31	2.96	2.38
Italy	1.10	1.20	1.32	.57	.39

1/ CONVERTED TO U.S. DOLLARS AT THE AVERAGE ANNUAL CONVERSION RATES PUBLISHED BY THE INTERNATIONAL MONETARY FUND IN THE MONTHLY INTERNATIONAL FINANCIAL STATISTICS.
SOURCE: PREPARED OR ESTIMATED ON THE BASIS OF OFFICIAL STATISTICS OF FOREIGN GOVERNMENTS, OTHER FOREIGN SOURCE MATERIALS, REPORTS OF U.S. AGRICULTURAL ATTACHES AND FOREIGN SERVICE OFFICERS, RESULTS OF OFFICE RESEARCH, AND RELATED INFORMATION.

COMMODITY PROGRAMS, FAS, USDA

1985 OUTLOOK FOR TOBACCO

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Despite significant changes in the Government's tobacco price support and production control program in both 1982 and 1983, the tobacco industry is faced with greater problems now than ever before. The U.S. tobacco outlook for 1984/85 is highlighted by very large supplies of leaf and stable or reduced demand for tobacco products. Because of the better quality 1984 crop, exports may rise a little but domestic use may drop further. Production in 1984 is up about 22 percent from last year. The larger production combined with only slightly lower carryin stocks has raised supplies about 4 percent to around 5.5 billion pounds. The size of the 1985 crop will depend in part on USDA's decision on quotas, which under current law, have to be made by December 15 for flue-cured and February 1 for burley and other kinds. Basic quotas for both flue-cured and burley could go lower. Effective quotas are also likely to drop below 1983 levels because quota carryover is lower. The drops in effective quotas point to a smaller crop next year if yields are average. Prices would likely change little from this year, so the drop in production would reduce the total value of the crop. During the next year, import quotas will be debated and legislative changes are likely to be considered.

Cigarette Sales Declining

Cigarettes are the dominant product of the tobacco industry in the United States and most other countries. U.S. cigarette output may drop to 655 billion pieces this calendar year, about 12 billion below 1983 and 40 billion below 1982. Cigarette consumption may drop for the third year in a row. Consumption per person in the United States, 18 years and older, may drop by 83 cigarettes (about 4 packs of 20) from 3,494 to 3,411. This would be the lowest since 1944. During the 1970's, cigarette smokers shifted toward low-tar brands, however, there has been a reversal the last two years. There was a decline in the low tar percentage the last two years, and the proportion may have steadied this year.

Despite an increase in the smoking age population, total consumption of cigarettes may decline slightly again in 1985 and per capita consumption is expected to decline again. Tax increases that have raised cigarette prices significantly the last two years are a primary reason for the expected decline in both total and per capita consumption. The Federal excise tax was increased from 8 to 16 cents a pack on January 1, 1983, the first increase since 1951. A total of 18 States raised excise taxes in 1983 and 1984 by about 4 cents a pack. State tax levies now vary from 2 cents per pack in North Carolina to 26 cents in both Connecticut and Massachusetts. The combined city and State tax is 29 cents a pack in New York City and 27 cents in Chicago, Illinois. Further State tax increases are expected to occur in 1985. Under current law, the Federal excise tax will revert to 8 cents a pack October 1, 1985.

Wholesale cigarette prices rose 7 times during the past 26 months, because of the doubling of the Federal excise tax and increases in manufacturers' costs. Retail cigarette prices jumped 32 percent from August 1982 to September 1984. However, the rate of increase in retail prices has slowed; they rose 5 percent from September 1983 to September 1984. Retail price hikes are likely to continue in 1985 at the slower level of 1984, and with an improved economy, this could cushion the drop in per capita use, resulting in a only a small drop in total cigarette consumption.

Antismoking activity and legislation continue to affect the industry. More and more states, cities, and counties have laws that either prohibit smoking in certain places or segregate smokers from nonsmokers. The U.S. Department of Health and Human Services and voluntary health agencies are continuing efforts to discourage smoking. The cumulative effect of publicity and ordinaces on smoking is uncertain, although it almost surely accounts for some of the downward trend in per capita consumption.

After several years of Congressional debate, legislation was approved on October 13, 1984 concerning health warnings on cigarette packages and printed advertisements. Effective October 13, 1985, four seperate messages about the hazards of smoking will be rotated at about 3-month intervals. All cigarette packages will bear one of the following warnings:

- Surgeon General's Warning: Smoking causes lung cancer, heart disease, and emphysema.

- Surgeon General's Warning: Quitting smoking now greatly reduces serious health risk.

- Surgeon General's Warning: Smoking by pregnant women may result in fetal injury and premature birth.

- Surgeon General's Warning: Cigarette smoke contains carbon monoxide.

Warnings on cigarette packages will be about 50 percent bigger than present ones and be surrounded by thick lines. Similar warnings will be posted on billboards and published ads for cigarettes. Manufacturers and importers are required to submit their plans for rotating the warnings to the Federal Trade Commission for approval.

The warnings will replace the current required label that states: "Warning: The Surgeon General Has Determined That Cigarette Smoking is Hazardous to Your Health".

Changes In Tobacco Per Cigarette Affect Total Use

Tobacco use in cigarettes remained relatively constant during the 1970's and in 1980 and 1981, despite the gain in cigarette output. For many years, manufacturers could economize in leaf use as they shifted to filtertip brands and used the whole leaf. Later, manufacturers began utilizing various leaf expansion processes and in recent years have used more imported tobacco to stabilize costs.

U.S. cigarette manufacturers used an estimated 1,193 million pounds of tobacco (unstemmed processing weight) in cigarettes in 1983. This was a little below 1982 but was 5 percent below 1981 because cigarette output declined. In 1983, domestic use declined but imports rose. This calendar year, with cigarette output decreasing, perhaps 2 percent, manufacturers are likely reducing their total tobacco use.

Manufacturers used on estimated 1.79 pounds of tobacco (unstemmed processing weight) per 1,000 cigarettes produced in 1983, about 4 percent above a year earlier but considerably below the levels of 10 to 15 years ago. Domestic flue-cured accounts for about 34 percent, burley 32 percent, and Maryland 2 percent. Foreign grown reached a new high of 33 percent. Ten years ago, it was 16 percent.

Consumption of Other Tobacco Products

Total consumption of large cigars (including cigarillos) may change little from last year's 3.6 billion. Consumption has declined the last 14 years and will likely decline slightly again in 1984. Current consumption is less than one-half the 1964 peak. Small cigar consumption may fall again. Use of smoking tobacco in 1984 in down to 29 million pounds, a record low. Consumption of smoking tobacco and cigars may change little next year.

Snuff production is up again this year. Moist snuff production is up while dry output is down. Chewing tobacco production is down a little. Production is down for all categories of chewing tobacco: plug, twist, and loose leaf. In 1985, snuff consumption may rise again while chewing consumption may fall further.

Tobacco Crop Much Larger

Tobacco production is up 22 percent this year because of favorable growing conditions and larger effective quotas and acreage allotments (largely burley). Despite relatively weak demand, prices for the higher quality flue-cured crop were 3-cents-a-pound higher than last year. Flue-cured cash receipts from the 1984 crop were a little higher. However, net farm returns have been further squeezed by the cost of producing and selling flue-cured tobacco which rose about 3 percent per acre from 1983. However, costs per pound declined 4 percent because of the yield increases.

As of November 1, the tobacco crop was forecast at 1.74 billion pounds, up 22 percent from a year earlier. Together with only slightly smaller carryin, total supplies for the 1984/85 marketing year are up about 4 percent.

Price support levels for both burley and flue-cured tobacco and all other eligible kinds except Puerto Rican are the same in 1984 as in 1983. When burley auctions open on November 19, prices will likely be a little higher despite the large crop because quality is much improved. Cash receipts from the 1984 burley crop will rise sharply.

At the beginning of the 1984/85 marketing year, unsold tobacco held under Government loan totaled about 1,170 million pounds (farm-sales weight), up about 370 million pounds or 47 percent for a year earlier. The big jump resulted from 256 million pounds of burley and 195 million pounds of flue-cured that went under loan during the 1983/84 marketing season. Together with 269 million pounds of burley and 260 million pounds of flue-cured taken under loan in 1982, unsold loan stocks have shot up 258 percent the last two years. Furthermore, loan takings from this season's flue-cured crop totaled 159 million pounds. Burley loan takings could exceed 200 million pounds this year as well. The combined loan takings of the last three years represent a sizable oversupply. Prices of much of the flue-cured and burley loan takings exceed the costs of comparable tobaccos from other countries.

The 1984 flue-cured auction season ended on November 8 with prices averaging $1.81 a pound, about 3 cents a pound higher than last year.

In early July, the Flue-Cured Tobacco Stabilization Cooperative announced a discount program of up to 60 percent for tobacco held under loan from the 1976-83 crops provided trade purchases from the 1984 crop reached 720 million pounds. However, trade purchases fell about 35 million pounds short of the targeted level. But, because of the severe oversupply, in late October, the Stabilization Cooperative announced price cuts of 50 to 90 percent on leaf it acquired from 1976 through 1981, with the oldest crops having the largest discounts. Prices of the 1982-84 crops are also discounted 10 percent. To obtain the large discounts for the older tobacco (1976-81), the purchaser must buy from the new tobacco (1982-84) at a ratio of two pounds of the newer tobacco to one pound of the older tobacco.

Government price support is mandatory for tobacco produced under marketing quotas. Price supports for flue-cured and other types, except burley, will likely be unchanged in 1985. Under the Dairy and Tobacco Adjustment Act of 1983, support prices for all but burley can increase only if the 3-year moving average of prices paid by farmers (including wage rates, interest and taxes) increases more than 5 percent. The index appears to be increasing between 3 and 4 percent. Burley support in 1985 will again be determined by the basic formula, which may permit about a 3-1/2 percent increase. However, under the No-Net-Cost Tobacco Program Act of 1982, the Secretary of Agriculture could hold the increase to a little over 2 percent.

Marketings from the 1984 flue-cured crop were about 1-1/2 percent below last year's marketings. Together with the smaller carryover flue-cured supplies for 1984/85 are about 1-1/2 percent below last season. The flue-cured effective quota was reduced by 6 percent this year. With higher yields, growers produced a little more tobacco in 1984 than was sold in 1983. Production is 3 percent above the effective quota so some growers have tobacco in excess of their allowable 110 percent this year. Leasing is not authorized during the marketing season, so such tobacco has been carried over on farms, because Stabilization or other firms have no provisions for receiving or processing this tobacco.

Under the acreage-poundage program USDA is required to announce the national marketing quota for the 1985 crop of flue-cured tobacco by December 15, 1984. The 1984 basic quota was 804 million pounds, or 80 to 90 million pounds below prospective use. Still, current supplies equal use for about 3.4 years, compared with the desired supply of 2.4 years, as provided for under the legislative formula. Because this season's marketings exceed 1984's effective quota the effective quota for 1985 will be lower than the basic quota.

The 1984/85 supply of burley tobacco is about 12-1/2 percent above last season. Carryover stocks on October 1 were 1 percent above a year ago despite the small 1983 crop. This year's crop is 52 percent above last year's drought-reduced crop. Acreage was up 9 percent and yields were 40 percent higher. USDA regulations allow the crop to be sold in bales, sheets, or hand-tied. Most of the crop will likely be sold in bales or sheets.

During the year ending September 30, 1984, burley disappearance totaled 501 million pounds, 13 percent below the previous year and 21 percent below 1979's record. Domestic use dropped 12 percent and exports fell 17 percent. The poor quality 1983 crop together with high U.S. prices and the strong dollar reduced exports to 112 million pounds, 23 million below the previous year and 29 million below the record set in 1981/82. Lower cigarette demand together with increased use of imported burley cut domestic use. Total use may increase in 1984/85 because increased exports may more than offset lower domestic use. The larger, higher quality 1984 crop will likely boost exports.

Legislation relating to burley tobacco requires that the national quota be at least 90 percent of the estimated disappearance for that year and at least 90 percent of the previous year's quota. With disappearance expected to be around 520 to 540 million pounds in 1984/85, the 1985 basic quota is likely to be reduced from this year's 582 million pounds. The 1985 effective quota will decline because this year's marketings are above the basic quota.

Among other types of tobacco, supplies of fire-cured, dark air-cured, and Southern Maryland, are all up. Supplies of cigar tobacco are down. Ample supplies of all types are available. Producer referendums will be held early in 1985 to determine if growers of Kentucky-Tennessee fire-cured (types 22-23), Kentucky-Tennessee dark air-cured (types 35-36) tobaccos and growers of cigar (types 51-52) desire acreage allotments for their next three crops. About one-fifth of the Maryland (type 32) tobacco, a non-quota kind, was produced in Pennesylvania this season outside the traditional Maryland belt.

ITC Investigation of Tobacco Imports

With sizeable supplies overseas at attractive prices, tobacco imports have gained in the U.S. market. Imports represented 33 percent of tobacco used in cigarettes in 1983. The imported tobacco was divided about equally between oriental (a type not produced in the United States) and foreign flue-cured and burley.

Because of the rise in imports, the U.S. International Trade Commission (ITC) is investigating whether flue-, fire-, and dark air cured and burley tobacco are imported under such conditions that may render ineffective or materially interfere with the USDA tobacco programs. The ITC investigation results from a request by the Secretary of Agriculture to the President, in which the Secretary indicated that imports may interfere with the support program for U.S. tobacco. Section 22 of the Agricultural Adjustment Act of 1933, as amended, provides that after the ITC study and recommendation, the President may impose import quotas or fees to protect USDA programs. At present, there are no quantitative restrictions on tobacco imports.

Section 22 review of tobacco has been requested only once before, in 1981. Imports of flue-cured tobacco had increased substantially in the late 1970's and USDA initiated Section 22 action for quotas on flue-cured tobacco in January 1981. However, the ITC not find material interference.

1985 Legislation

The tobacco program is under continuing legislation and, unlike most commodities, it does not have to be rewritten every 4 years. But a number of legislative changes have been made since the basic marketing quota provisions of the Agricultural Adjustment Act of 1938. In fact, three laws were enacted in 1982 and 1983 that made major changes in the tobacco price support program. Still, major concerns persist and many organizations representing tobacco producers favor further modifications of the price support formula, quotas, and leasing provisions.

TOBACCO OUTLOOK

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Tobacco Association of United States, Inc.

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OUTLOOK '85

Thank you for this opportunity to participate in the Annual Agricultural Outlook Conference.

Looking at the world tobacco situation as it relates to cigarette leaf, I think the current situation can be described as one of weak demand and relatively abundant supplies.

The level of world cigarette output is a good indicator of the demand for light cigarette leaf. During the past few years, world cigarette output has tended toward increasing slightly or remaining stable.

Cigarette output in most of the developing countries has remained stable or declined in the past few years. Key markets where cigarette consumption has declined include the United States, Japan and the United Kingdom. The current outlook is that cigarette consumption in the developing countries will remain static or decline.

Markets which hold more promise for increased consumption of cigarettes made from light tobaccos include several advanced developing countries such as Taiwan, the Phillipines, South Korea, Thailand, Malaysia and Indonesia.

In the period ahead, some of the developing countries in North Africa and the Middle East are potential growth markets for U.S. flue-cured and Burley tobacco. This

group includes Egypt, Algeria, Morocco, Tunisia and Iraq.

In many of the developing countries, there is a consumer preference for the American-blend cigarettes, which contain U.S. flue-cured and Burley. In many of these countries, the consumption of cigarettes made from light tobaccos can be expected to increase if their economies improve and disposable income increases in the period ahead.

Based on information now available, it appears that world cigarette output and world trade in light cigarette tobaccos in 1985-86 will be near or slightly below current levels. U.S. cigarette consumption and U.S. exports of flue-cured and Burley tobaccos in 1985-86 will likely be slightly below current levels.

Looking a little further down the road -- what is mid-term and long-term outlook for exports of U.S. tobacco?

The outlook for exports of U.S. tobacco over the longer term will be affected by a number of factors. Among those are (1) the strength of the dollar, (2) economic conditions in key markets, (3) the smoking and health issue, (4) extent of increases in taxes and cigarette prices, and (5) the quantity, quality and prices of competitive production.

The above factors are important in determining the level of U.S. tobacco exports in the period ahead. However, a key to the mid-term and long-term outlook is the farm program policy and trade policy of the U.S. relative to tobacco.

I would now like to discuss the longer term outlook for U.S. tobacco exports from the standpoint of several alternative developments:

FIRST: Continuation of the current tobacco program.

The tobacco situation has continued to deteriorate under the current program. It has resulted in decreased exports, decrease in domestic use, accumulation of larger loan stocks, substantial losses on sales of loan stocks, and reductions in quotas. Failure to promptly change the program to a market-oriented one in which the support level is set at market clearing levels will result in collapse or self-destruction of the program. Time is of the essence, in fact, it may be too late to save the program. Recent tobacco legislation has been in the nature of Band-Aid or quick-fix legislation which did not come to grips with the real problem facing U.S. tobacco.

SECOND: No tobacco program.

Dr. Dan Sumner of North Carolina State University has published a recent study entitled, "Consequences of Termination of the Tobacco Program." The conclusions of Dr. Sumner indicate that termination of the program would result in increased exports, increased domestic use and increased production. He indicates that all sectors of the tobacco economy except the allotment holders would be better off if the program, as it now exists, is terminated.

THIRD: Minor Changes in the program.

If further legislation is passed which is of a Band-Aid

or quick-fix nature, the U.S. tobacco economy will continue to go downhill. We can expect lower exports, less domestic consumption and lower quotas. Such minor legislative changes at best may result in some slight delay in the collapse or self-destruction of the program.

FOURTH: Adoption of a market-oriented tobacco program.

U.S. tobacco is faced with a critical problem. The U.S. is not price competitive in the world market and we are losing our markets.

If we continue with the current tobacco program with above-market clearing levels of price support, we will ultimately reduce our tobacco economy to producing only for the domestic market.

Legislation is sorely needed which will result in a market-oriented program, a program which establishes the price supports at market clearing levels. It will enable the U.S. to compete internationally by producing higher volumes at market prices. Such a program can be expected to increase exports of U.S. tobacco, increase domestic use, lower the quantity going under loan, and increase tobacco quotas.

FIFTH: An open international trading system.

International markets are vitally important to the U.S. tobacco economy. In 1984, the U.S. exports of unmanufactured tobacco and products is estimated at about $2.8 billion. The value of estimated U.S. imports of tobacco is about $600 million. Thus, our net favorable trade in tobacco is a plus $2.2 billion.

Thus, it is vitally important for the U.S. tobacco sector to have a consistent broad-based trade policy. Part of such a policy must include domestic tobacco programs that recognize our growing dependence on foreign markets and do not interfere with the market and encourage additional foreign production. Since exports are truly the life's blood of U.S. tobacco, it behooves us to promote freer and fair trade in all sectors of our economy. As the world's largest exporter of tobacco, the U.S. has the most to gain from a freer trade policy, and the most to lose from a policy of protectionism.

Trade is a two-way street. To export, we must be willing to import.

U.S. purchases of Japanese cars, radios, T.V. sets, etc., enable Japan to be the Number 1 purchaser of U.S. tobacco.

U.S. purchases of wine, footwear, lower quality tobacco, etc., enable Italy to be a good customer for high quality U.S. tobacco.

In recent years, a number of tobacco officials have sought import relief through a combination of duties and quotas. Such actions can be expected to have a direct impact on our ability to move U.S. tobacco and other agricultural products to foreign markets.

In a recent conversation with an Italian tobacco official, he made the following statement to me:

"The U.S. imported about $20 million worth of low quality Italian leaf last year. The U.S. exported about $90 million worth of good quality U.S. tobacco to Italy last year. During the past two years, the U.S. has taken the following actions -- (1) In August 1983, the U.S. Customs reclassified machine-threshed cigarette leaf. The change from tobacco, manufactured and not manufactured, NSPF, to stemmed leaf practically doubled the duty on Italian leaf. (2) The U.S. passed a law requiring grading of imported tobacco at the expense of the importer, which increased the cost of Italian leaf. To my knowledge, no other country in the world has such a requirement. (3) At the urging of some tobacco officials and politicians, the U.S. is now planning a Section 22 investigation. Some U.S. tobacco officials have urged that imports to the U.S. be cut more than 50 percent of recent levels. After taking such actions as these -- how much longer does the U.S. expect Italy to continue to purchase good quality U.S. tobacco?"

Protectionism is not the answer to the problems facing our tobacco economy. It can be expected to result in retaliation and thus worsen our problems in foreign markets.

To improve the outlook for U.S. tobacco, we need a market-oriented tobacco program and a freer and fair trade policy.

David G. Unger
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THE OUTLOOK FOR SOIL AND WATER CONSERVATION

It is appropriate to look to the future of soil and water conservation in the United States first by recalling the past.

Early next year, the Soil Conservation Service will mark the fiftieth year of its existence as an agency in the United States Department of Agriculture. The agency was born during a troubled time. Severe drought in the early thirties had compounded the devastation that the Great Depression had brought to the nation's farm economy. The fertile soils of the Great Plains choked the air all the way from the country's midsection to the Atlantic Ocean.

Through demonstrations, research, and special projects, early Soil Conservation Service employees helped restore the health of the land. We are justifiably proud of what our agency accomplished. But we were not alone. From the late thirties to the late forties, every single state passed a law authorizing formation of local governmental bodies -- known as soil and water conservation districts -- to promote soil conservation. The states formed soil conservation agencies to monitor and improve resource conditions. And other agencies in the U.S. Department of Agriculture provided cost-sharing, loans, research, and other services.

Thus was formed a partnership that still exists today -- a partnership that has proven effective in helping farmers and ranchers meet their conservation needs. This partnership has been a strong one over the years.

All of these partners share a common commitment. We believe that soil and water conservation is a continuing job. It is a process of solving existing problems and preventing new ones from occurring . . . a process of harmonizing farming and ranching operations and the natural environment in which they take place . . . a process of protecting and maintaining the soil and water resources upon which life depends. It requires constant care and commitment -- as long as agriculture is practiced on this earth.

Today, I will discuss briefly how we in the Department of Agriculture are pursuing that commitment through our comprehensive program for soil and water conservation. Further, I will examine some of the issues now being debated within the Department as we prepare our recommendations for the 1985 farm bill.

The National Conservation Program

From time to time, we must pause to re-evaluate what we do. After all, economic, social, and environmental conditions change. The late seventies was a time for such a self-evaluation.

The U.S. Department of Agriculture has nearly 30 programs that affect soil and water conservation, including all programs in the Soil Conservation Service and one or more in each of seven other agencies. The vehicle for reviewing and adjusting these programs was the Soil and Water Resources Conservation Act of 1977, which led to the National Conservation Program which President Reagan transmitted to Congress in December 1982.

The National Conservation Program established, for the first time, clear national priorities for soil and water conservation. These

priorities are: reducing soil erosion, reducing upstream flood damages, and conserving water. The Department of Agriculture has made two-thirds of its conservation technical and financial assistance accountable to these goals, especially erosion control. The rest is available to help local people solve local priority problems, where those priorities differ from the national priorities.

To make the most effective use of increasingly scarce funds and personnel, we increased our focus on the most severe resource problems in areas where additional effort will have the most impact. We call this concept "targeting," and it has already helped bring about reductions in soil erosion, water use, and soil salinity in targeted areas.

Another very important part of the National Conservation Program is putting our own house of USDA programs in order. Under provisions of the program, we are working to reconcile inconsistencies among various programs of the Department.

1985 Farm Bill

This emphasis has been carried over into deliberations for the 1985 farm bill. Secretary Block and his top staff have spent much of this year developing strategies for the bill. Even now, there is discussion at the highest levels of the Department about possible Administration proposals for new farm legislation.

Traditionally, the farm bill has been a device to help increase or stabilize farm income, and conservation has seldom been more than an afterthought. Not so this year. Recent widespread interest in soil and water conservation gives us a unique opportunity to look at how USDA

commodity programs affect natural resource conditions, and to make conservation a meaningful part of the farm bill.

To that end, we have discussed a number of issues that hinge on conservation performance. Three issues that the Administration is giving serious consideration to are the plow-out of marginal lands for crops, a conservation reserve, and targeting to critical resource problem areas.

The Plow-Out Issue

The plow-out of non-cropland (usually grazing lands) for crops (usually wheat) has been most common in Colorado, Montana, and other states in the western Great Plains. In general, this involves the plowing of land that is marginal for wheat or other crops and that also is subject to high rates of erosion when stripped of cover.

Some lands just should not be farmed. We know that the short-term gains an individual might get from "sodbusting" are negated within three to five years by wind erosion and loss of soil moisture. The land may not recover for decades.

We also know that some operators are plowing out these lands in expectation of eventually realizing some benefits in part from federal commodity programs. That federal programs contribute at all to such practices should be a matter for concern . . . and we are concerned.

We had hopes that the Congress would pass the "sodbuster" legislation originally sponsored by Colorado's Senator Armstrong and Representative Brown. That legislation fell by the wayside, however, as the 98th Congress ended, because of a proposal by the House of Representatives to add to it a new $225 million national paid conservation acreage diversion.

The Administration opposed the House amendments, not because the conservation acreage reserve is a bad idea -- it's not -- but because those amendments introduced complications to a worthwhile bill on the eve of the farm bill debate. And the Secretary wanted to look at a variety of conservation approaches in the context of that debate. Thus, the 1984 sodbuster legislation died when the Senate, backing the Administration's position, declined to accept the paid conservation acreage diversion and the House refused to accept sodbuster legislation alone.

Even when "sodbuster" legislation is passed -- and I am confident that it will be, either as part of the farm bill or separately -- farmers and ranchers still will be free to decide how to manage their lands. That is as it should be.

If owners do see fit to plow-out their fragile lands, they still will be able to do so as far as the federal government is concerned. They'll still be able to sell into a sometimes price-supported market. They simply won't be eligible for certain federal benefits.

Conservation Reserve

Another proposal under consideration for inclusion in the farm bill is the conservation reserve that I mentioned earlier. Such a reserve would, in effect, retire from crop production highly erodible and seriously eroding land and put it into a soil-conserving use under ten-year contracts. The reserve would require federal costs in the form of annual rental payments to farmers, and in the form of initial cost-sharing to help establish grass or trees on the land.

A conservation reserve would reduce production and, therefore, surpluses. It also would provide some annual income to participants.

Its costs would be offset -- at least in part -- by reductions in commodity support programs. Establishment of permanent plant cover on marginal cropland would reduce soil erosion, thus preserving the productive capacity of the soils and reducing degradation of nearby water supplies. It also would increase available supplies of timber and grazing and would enhance wildlife habitat.

The case for a conservation reserve rests on two facts. First, we simply have too much land in crops. The production from this land forces prices down at a time when farmers have no economic breathing room. Second, some of this production comes from land that cannot grow crops without eroding excessively. The best way to reduce erosion to tolerable limits on such lands is to use them in accordance with their natural capability -- that is to say, for grass or trees.

One major problem with a conservation reserve for reducing surplus production is that such lands generally are not highly productive of crops in the first place. Yields tend to be lower -- often much lower -- than yields on better lands. Therefore, removing a specified percentage of cropland from the production base would not yield a comparable reduction in total production.

The Soil Conservation Service is conducting tests of voluntary paid diversions of erodible cropland to grass or trees for ten years in pilot projects in Alabama, Idaho, and South Dakota. The preliminary results are encouraging, but it is still far too early to make any final judgements on the overall success of the projects. For now, though, we can say that response on the part of land owners in the three areas has been good. We are optimistic that we will make significant progress in

reducing soil erosion and encouraging land use more compatible with the natural capability of the land.

The 1984 Acreage Conservation Reserve Program, which Secretary Block announced as one of several conservation initiatives last December, had a similar thrust. That program involved 90 percent cost-sharing from the Agricultural Stabilization and Conservation Service for farmers who voluntarily put highly erodible cropland into grass or trees for five or ten years. ASCS made available $20 million for that program and got sign-ups for some 123,000 acres.

Targeting

Another much-discussed issue is the targeting of technical and financial assistance to critical resource problem areas. Such targeting began in 1981, when SCS designated 132 counties in ten states as needing more technical assistance to reduce serious erosion. In 1982, SCS increased the amount it put into technical assistance for these areas, and ASCS earmarked part of its Agricultural Conservation Program funds for additional cost sharing in the same areas. In 1983 and again in 1984, both agencies expanded the number and size of targeted areas and increased the proportion of their available resources that they allocated to those areas.

The National Conservation Program called for USDA to expand targeting each year through 1987. So far, our targets have been mostly erosion-prone, water-short, and saline areas of cropland.

Up until this year, most of the expansion of targeting on the part of the Soil Conservation Service occurred with increases in appropriations made available by Congress -- "new" funds, if you will.

All expansions of ACP targeting came out of a total annual allocation of $190 million, leaving progressively smaller amounts of funds for cost sharing in non-targeted areas.

For 1985, however, it became clear that there would be no increase in appropriations for SCS Conservation Technical Assistance. That meant that increases in targeting would come at the expense of what might be called a "base" level of assistance in non-targeted areas. So for fiscal year 1985, Congress froze targeting at the level in effect for fiscal year 1984 -- some $27½ million for Conservation Technical Assistance and $19 million for the Agricultural Conservation Program -- instead of allowing the two agencies to earmark an additional five percent of those two programs for targeting.

It is unfortunate that this happened. The great merit of targeting is that it directs additional federal resources -- which are not unlimited -- to treatment of the worst problems. Targeting gives us more bang for our buck.

A Time for Change

It is a healthy sign that the farm bill debate is linking conservation and commodity programs more closely than ever before. These programs should not be discrete entities . . . they all should be vital parts of a complete farm program -- just as they are vital factors that good farmers take into account as they manage their individual farms.

The choices we make in a farm bill next year -- including the counsel Congress chooses to follow in developing the bill -- are as important as any choices now facing the American public. The ramifications of those choices extend far beyond the farm gate.

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Just as soil erosion gradually changes the physical landscape, new research findings and politicians' shifting perceptions of the importance of problems constantly change the landscape of the conservation issue. A strong base of support for a concerted conservation program remains--the conservation ethic, stewardship, is a strong motivating force. Concerns about productivity and production costs, especially as a constraint on future generations in this country and around the world, are often heard. However, while it is not possible to accumulate evidence on the long term--50, 100, 500 year--race between technological advance and population growth, the evidence on the shorter term suggests that the existing land base and technology will be adequate to meet the demand for food and fiber over the next decade. Thus, productivity arguments are less compelling in the political arena than they would be if shortages were imminent.

But if productivity concerns are diminishing somewhat, evidence that the offsite damages are substantial continues to mount. In some cases, sedimentation alone is estimated to be an order of magnitude greater than the onsite (farm-level) damages. Such evidence is resulting in the reorientation of the thrust of programs of traditional conservation agencies and legitimizing the increasing role of environmentalist in the policy process. A final important change in the landscape of the conservation issue is the critical assessment of the efficiency of programs during the first 50 years of conservation effort. This analysis has resulted in a reorientation of ongoing programs away from equity and toward improved efficiency considerations.

This paper begins by enumerating several changes likely to occur in the soil conservation aspects of the 1985 Farm Bill. Next, several alternative policies that could be pursued in future years will be briefly discussed. This will be followed by a consideration of the likely directions of soil conservation policy over the longer term horizon.

The 1985 Farm Bill

Let us turn, then, to an analysis of what may be in store for 1985. Emphasis must be placed on the uncertainty due to the changes in the Senate and House Agriculture Committees as a result of the Congressional election. Also, the severe financial stress in agriculture can be expected to reorder the priorities of some farm interest groups away from conservation programs this year. While the outcome is uncertain, it

seems reasonable to expect that the traditional program will remain in place but with expanded (a) targeting, (b) new-land conversion controls, and (c) cross compliance provisions. The entire debate will occur in a climate where funding levels for all programs will be carefully scrutinized, and this factor may well be of overriding importance in shaping the type and extent of policies adopted.

Targeting

Over the last several years, reports have appeared indicating that a reasonably large portion of the federal soil conservation dollar was being spent on practices installed on land with minimal soil erosion problems. The reaction to this information has already resulted in some change in the operation of existing soil conservation programs at the federal, state, and local levels. Both the policies and the practices have moved toward targeting of effort toward land with the more serious erosion problems. Continued movement in this direction can be expected. It will occur over objections of those in areas finding support for programs diminished. These objections will be strong enough to insure that the transition will not be complete. That is, we will not close soil conservation offices in states or counties with minimal soil erosion problems. This targeting will continue to be defined in terms of physical dimensions of the problem. That is, cropland with the highest erosion rate will be selected for the most aggressive soil conservation activities. The support for targeting is suggested in Table 1. These data from a recent 17-state survey show that basing the distribution of funds on the degree of problem is supported at a ratio of approximately two to one.

Sodbuster Legislation

Considerable momentum appears to be building in support of expanding legislation that would discourage or prevent the plowing of erosive newland, land currently in pasture or woodland. Bringing such land into production to produce crops already in surplus is considered unreasonable by many, especially when the land is susceptible to serious erosion problems. In addition to concerns about the property rights of land owners, considerable debate on the means of equitably treating those individuals who have and who have not already plowed erosive land can be expected.

Cross Compliance

Cook described cross compliance as "an abstract political curio...a mythical beast--the Lochness Monster of conservation policy, often sighted but never described in convincing detail."* In the same 17-state survey, the range of responses agreeing or strongly agreeing with the proposition that soil conservation requirements should be instituted to qualify for price and income program benefits ranged from 52 percent in

*Ken Cook, "Cross Compliance: Is It Bold, Manacing, or Just Plain Dumb?" Journal of Soil and Water Conservation, July-August, 1984, pp. 250-251.

Texas to 73 percent in Nebraska (see Table 2). A number of previous opinion polls have also indicated that both farmers and urbanites favor the cross compliance principle. These attitudes will certainly translate into considerable pressure for this type legislation. For example, it is likely that any set-aside program will carry a strong conservation flavor. Erosive lands are likely to be targeted for particularly aggressive attempts to bring them into any set-aside program.

Other forms of cross compliance have been mentioned, but with less likelihood of adoption this year or in the near future. Requiring adequate progress toward a conservation plan to qualify for disaster relief or federally supported loans is not likely. Neither is the disallowance of write-offs of other income for taxation purposes likely to be made conditional on conservation activities.

This and many other possible cross compliance (or even cross coordination) initiatives will be met by the practical problem of reducing participation in one or both programs. Also, some studies have indicated that the overlap among farmers participating in conservation and other federal farm programs is not as great as might be expected. Thus, this most appealing of concepts may face substantial hurdles in the political arena and may have less impact than often presumed.

Funding Levels

Program expenditure levels--money--will and should be a major issue in the conservation debate this year. This question is especially relevant in the case of conservation because it can be viewed as saving soil for the the future. Conservation expenditures may or may not be more valuable to future generations than reducing the size of the national debt. This trade-off becomes even more appropriate when one considers that with an adequate expenditure of funds most, not all, erosion-damaged land can be reclaimed. We have learned to reclaim strip mined land; in fact even the deserts can be made to bloom. The point is that future generations may prefer additional financial resources which they may allocate to reclaim land, or to serve other needs, over an uneroded land base.

Extra Policy Changes

Before moving to a consideration of additional policy changes which might be adopted, it may be worthwhile to note that some of the changes occurring under the existing policies and within ongoing programs. These changes may have impacts equal to or greater than the headlined changes in farm policy. For example, gains remain to be made by improving the educational programs available to farm operators. For example, the SOILEC model we developed at Illinois is soon to be made available on a nationwide basis through the Soil Conservation Service. This computer based model will allow SCS personnel or farmers to quickly and easily compare a wide range of tillage, rotation, and conservation options. Financial and soil loss data are estimated on an annual and long-term basis. The model often identifies options that will save soil and produce net returns equal to or greater than the more erosive practice currently employed. This model is just one of a number of powerful, new educational tools becoming available.

Another Illinois example of such a change is the current pilot-testing of a reorganization of the state Soil Conservation Service program thrust and data base on a river basin and watershed basis. This structure would replace the county/township structure that has existed for years. It is intended to facilitate dealing with the offsite impacts of soil erosion (which will be discussed later) more effectively by targeting the conservation efforts to those areas that will make a substantial difference. We are currently developing a computer model similar to SOILEC (SEDEC) to deal with the movement of sediment in small watersheds. This will allow the Soil Conservation Service to work with small groups of farmers on a watershed-by-watershed basis. They will be able to identify the practices that will have the greatest impact, both in terms of farm and downstream or offsite damanges. This change may be an important step toward a more effective conservation policy.

OTHER POLICY ALTERNATIVES

There are a number of alternative policies that could be adopted or expanded to encourage soil conservation efforts. As noted, additional gains can be made simply through continued education efforts. As new individuals enter farming, as new tillage and other production techniques become available, and as prices of inputs and outputs change, the potential exists for improvement in the soil conservation area by adopting profitable soil conserving techniques. However, education and voluntary adoption cannot be expected to deal adequately with the problem. There is a legitimate societal interest in the question, which can only be addressed through public policy.

Regulations

A variety of regulatory approaches are possible. Requiring implementation of a soil conservation plan, zoning type constraints on crops produced, specification or prohibition of certain practices, and specification of a maximum soil loss limit are among the regulatory alternatives. It is unlikely that any of these regulatory approaches will go beyond the discussion stage at the federal level in 1985 or in the near future. Given that voluntary actions cannot be expected to be adequate, and economic incentives are likely to be judged too expensive, movement toward regulations is a real possibility in the long term.

Investment

The government could invest in soil conservation activities by building soil erosion or sedimentation control structures. The government could purchase highly erodable land or the land along streams to create greenbelts. Such purchase might be on a fee simple basis or might be limited to purchase of an easement precluding row crop production. Easement purchase would allow the ownership to remain in the private sector, albeit with restricted use privileges, and would reduce the cost to the government. Some movement in this direction, perhaps in the form of long-term contracts, may be seen this year, but it is unlikely major steps will be taken.

Economic Incentives

Positive or negative incentives can be implemented to encourage improved soil conservation activities. The ongoing cost sharing program is such an example of such an incentive. More liberal investment tax credits could be provided to producers purchasing conservation practices or equipment. Conceptually, it would be possible to compensate producers on the basis of an estimated soil loss reduction due to modifications in farming practices. On the negative side, taxation of soil losses estimated to exceed tolerance limits could be implemented. Practically, it would be difficult to estimate the level of erosion with sufficient accuracy to determine the appropriate level of incentive payment or tax. Also, the administration and enforcement costs of some of these options may be prohibitive. As a result, movement here is not likely in the foreseeable future.

Taxing Districts

A more specialized, expanded form of the taxing alternative would be to encourage watershed based taxing districts. Some combination of property, water use, and recreation use taxes could be implemented on a watershed basis. Revenues generated would be used to fund erosion control contracts with farmers, to construct sediment control facilities, or to dredge ditches and reservoirs. In order to move in this direction, the statutory framework must be in place at the state and local levels, and the administrative mechanisms must be developed. This suggests movement will be slow.

Other special purpose taxes are occasionally suggested as a means of generating revenue to support soil conservation programs. These range from local real estate taxes to tariffs on agricultural exports. While such taxes are often supported by those likely to receive the benefits of the tax revenues generated, considerable reluctance can be expected to new forms of taxation and even to the concept of special purpose taxes.

LONG-TERM DIRECTIONS

Offsite Orientation

Day by day--year by year, the offsite damages associated with soil erosion gain importance in the public policymaking process. The offsite damages associated with soil erosion include: the sedimentation of roadside ditches, drainage channels, rivers, harbors, lakes, and reservoirs; increased water treatment costs; reduced recreational uses of water; increased flood damages; adverse impacts on wildlife from suspended sediment, plant nutrients, and agricultural chemicals; and negative esthetic impacts. Of course many of these damages have long been recognized. They are gradually gaining in importance in the public policymaking process because additional information is available, and those working with soil conservation policies and programs are beginning to perceive offsite damages as "their" problem.

Especially over the last decade, research indicating the nature and magnitude of offsite impacts has become available at an increasing rate. This increased flow of information estimating the magnitude of the physical and economic impact of these damages has generated two changes. First, the priorities of the individuals and institutions historically concerned with the productivity aspects of soil erosion problems have begun to change to include this new set of problems. Secondly, new individuals and institutions are now recognized as having a legitimate role in this policy formulation process because their wellbeing is influenced by the problems associated with erosion. Prior to these changes, many in the "conservation establishment" argued, perhaps implicitly, that an appropriate first step toward addressing offsite damages was to deal with the onsite or productivity aspects. This approach is now being recognized as too crude to effectively deal with the problem.

While changes have occurred, a reorientation to fully recognize the offsite problem is not complete and will not be complete in the near future. The physical and economic data base remains imprecise--inadequate. Measuring the impacts of random weather events on a complex landscape is inordinately difficult. Eventually, it would be appropriate to adopt a policy which would target conservation expenditures, not on the physical dimensions of the problem but on the economic impact of the practices implemented, the "biggest bang for the buck" approach. To adopt this policy for both on- and offsite damages, it would be necessary to be able to identify the source of sediment reaching various points in the water system. Further, one would need to understand the secondary impacts of the practice adopted. Would effective soil loss control result in increased stream bank erosion (due to the scouring action of clean flowing water), or would the reduction in peak flows result in a decrease in bank erosion? Much work remains before we will know the answer to many such questions.

In addition to these data problems, the effective coalitions among those involved in the policy formulation process have not yet evolved. Coalitions among interest groups currently focused on on- and off-farm problems can be expected. New working relationships with and within federal, state, and local agencies concerned with these issues will continue to develop. Even the structure or membership of legislative committees may change. As these new institutional arrangements become effective, it will be possible to do a better job of allocating resources to problems in order to reflect not only the onsite or productivity concerns but the offsite problems as well. However, in this process conflicts over questions such as the designations of responsible agencies may prevent adoption of policies that are otherwise acceptable.

Equity Issues

In addition to the concerns over adequate information and new political coalitions, there will be significant debate on the appropriateness of various policy alternatives from an equity or fairness perspective. As I pointed out in a recent commentary in the Journal of Soil and Water

Conservation, a number of equity criteria are recognized in the public policy process. Depending upon the criteria one selects, it is possible to argue that farmers, consumers, water users, or society should bear the cost of soil erosion control. While it is safe to predict that the outcome will be a compromise, what that compromise will be will reflect the effectiveness of the participants in debate.

In summary, I expect that the policy process in 1985 will make a number of modifications to the conservation-related aspects of the Farm Bill. They will be relatively minor and will be representative of our evolutionary approach to policy development. These changes will move toward a targeted response to farm and offsite erosion problems, with some cross eompliance elements included. This trend can be expected to continue both in the development of new policy but perhaps just as importantly in the operation of ongoing institutions.

Table 1. Preferred Policy on How Federal Soil Conservation Funds Should Be Distributed.

Region and state	Give funds to states in proportion to number of farms	Give more funds to states with most severe erosion problems	Not sure	Other	No response
	percentage of respondents				
North Central					
Illinois	22	54	14	8	2
Indiana	27	52	13	7	1
Kansas	24	55	12	7	2
Michigan	31	46	14	7	2
Minnesota	25	55	11	7	2
Nebraska	22	53	15	8	3
Ohio	26	51	13	8	2
South Dakota	10	43	8	38*	1
Wisconsin	28	53	10	6	3
West					
Idaho	20	57	11	10	2
Washington	22	59	11	0	8
South					
Alabama	26	53	8	4	9
Florida	28	48	15	7	3
Oklahoma	27	55	10	8**	---
South Carolina	31	46	9	6	7
Texas	34	43	12	3	8
East					
Maryland	24	57	9	8	2

*Thirty-one percent said funds should be distributed in proportion to the acreage in each state.
**Includes those who did not respond.

Source: Same as Table 1.

Table 2. Responses to the Statement That Farmers Should Be Required to Follow Recommended Soil Conservation Measures to Qualify for Price- and Income-Support Program Benefits.

Region and state	Strongly agree	Agree	Not sure	Disagree	Strongly disagree	No response
			percentage of respondents			
North Central						
Illinois	25	40	8	16	10	1
Indiana	23	40	12	16	9	1
Kansas	23	36	10	20	9	2
Michigan	26	38	9	14	10	3
Minnesota	26	38	8	17	8	3
Nebraska	35	38	9	10	6	1
Ohio	33	36	7	13	10	1
South Dakota	28	41	8	14	8	1
Wisconsin	31	34	6	16	11	2
West						
Idaho	17	40	8	21	12	2
Washington	25	35	7	15	15	3
South						
Alabama	30	35	10	10	8	8
Florida	23	38	14	12	11	2
Oklahoma	27	41	10	14	7	1*
South Carolina	25	39	8	14	7	7
Texas	22	30	8	18	14	8
East						
Maryland	27	44	8	12	7	2

*Includes those who made other responses or did not respond.

Source: Guither, Harold D., Jones, Bob F., Martin, Marshall A., and Spitze, Robert G. F. U.S. Farmers' Views on Agricultural and Food Policy: A Seventeen-State Composite Report. North Central Regional Extension Publication 227, North Central Regional Research Publication 300, p. 21. December 1984.

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